Government of West Bengal
West Bengal Health Recruitment Board
Benfish Tower (1st, 2nd&3rd Floor), GN- 31, Sector- V, Salt Lake City, Kolkata- 700091 Tel.(off): +91 33 23570085 Fax: +91 33 2357 0080 E-mail: wbhealthrecruitmentboard@gmail.com, Website: www.hrb.wb.gov.in

Memo No.: 119/ HFW-53024/8/2025-SECY(HRB)(HFW)-Dept. of H&FW-Part (1) Dated: 20.01.2026

Notice

Reference(s):-

i) Memo No.: 941/HFW-53024/8/2025-SEC(HRB)(HFW)-Dept. of H&FW Date: 03.11.2025
ii) Memo No.: 1133/HFW-53024/8/2025-SEC(HRB)(HFW)-Dept. of H&FW Date: 21.11.2025

Answer keys to the Computer Based Test (CBT) in connection with recruitment to the posts, mentioned in the table below, are hereby published for information and guidance of candidates.

Name of the Post: Medical Technologist (Dialysis/Perfusionist/Radio Therapeutic/(EEG/EMG)/Cath Lab/RD/ECG) Grade III, Medical Technologist (OT)/(Critical Care) Grade-III (Special Drive for Reserved Category)
Advertisement No.: R/Medical Technologist (Dialysis/Perfusionist/Radio Therapeutic/(EEG/EMG)/Cath Lab/RD/ECG) Grade III/9/2025 Dated: 07.08.2025 **Advertisement No.:** R/Medical Technologist (OT)/(Critical Care) Grade-III (Special Drive for Reserved Category)/10/2025 Dated: 07.08.2025
Date of Computer Based Test (CBT): 14/01/2026 (Wednesday)
1st Shift Time
11:00 am to 12:00 Noon

Notations :

1.Options shown in green color and with ✔ icon are correct.
2.Options shown in red color and with ✘ icon are incorrect.

Sd/-

Secretary & Controller of Examinations
West Bengal Health Recruitment Board

West Bengal Health Recruitment Board

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist Cath Lab
Subject Name :	Medical Technologist Cath Lab
Creation Date :	2026-01-13 12:40:07
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist Cath Lab

Group Number :	1
Group Id :	4410091752920
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks :	100

Section A

Section Id :	4410091774411
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	30
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782855
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 1 Question Id : 4410091521965 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

The thyroid gland is anatomically located:

Options :

1. ✖ Behind the sternum
2. ✔ Anterior to trachea, in the neck
3. ✖ In the abdomen
4. ✖ Behind the brain

Question Number : 2 Question Id : 4410091521971 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Normal adult systolic blood pressure is approximately:
Options :
1. ✖ 160 mm Hg
2. ✖ 80 mm Hg
3. ✔ 120 mm Hg
4. ✖ 200 mm Hg

Question Number : 3 Question Id : 4410091521982 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
How does the plasma differ from the serum?
Options :
1. ✔ Lacks clotting factors
2. ✖ Contains clotting factors
3. ✖ Contains more antibodies than the serum
4. ✖ Obtained after the blood clots

Question Number : 4 Question Id : 4410091521994 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The main function of the platelets is to:
Options :
1. ✖ Transport oxygen
2. ✖ Secrete antibodies
3. ✔ Aid in blood clotting
4. ✖ Regulate blood pH

Question Number : 5 Question Id : 4410091527189 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The organ that carries urine kidney to the urinary bladder is:
Options :
1. ✖ Urethra
2. ✔ Ureter
3. ✖ Uterus
4. ✖ Renal vein

Question Number : 6 Question Id : 4410091521958 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The primary function of the urethra is to:
Options :
1. ✖ filter blood and form urine
2. ✔ Store urine before excretion
3. ✖ Transport urine from bladder to exterior
4. ✖ Reabsorb water and electrolytes

Question Number : 7 Question Id : 4410091527216 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following best stimulates aldosterone secretion from the adrenal cortex?
Options :
1. ✖ Low blood potassium level
2. ✖ High blood sodium level
3. ✔ High blood potassium level
4. ✖ Increased urine output

Question Number : 8 Question Id : 4410091522020 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What are the most important consequences of improper management of hospital waste?
Options :
1. ✖ Aesthetic problems
2. ✖ Chemical pollution
3. ✔ Direct and indirect health hazards
4. ✖ Increased hospital costs

Question Number : 9 Question Id : 4410091527268 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a component of biomedical waste?
Options :
1. ✖ Kitchen waste
2. ✔ Sharps (needles, scalpels)
3. ✖ Garden waste
4. ✖ Office paper

Question Number : 10 Question Id : 4410091522015 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why is colour coding done in biomedical waste management?
Options :
1. ✖ To Indicate the toxicity of the drugs
2. ✔ To classify the types of waste and their containers
3. ✖ To Label patient risk categories
4. ✖ To Identify staff responsibilites

Question Number : 11 Question Id : 4410091522030 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Dengue is primarily transmitted by:
Options :
1. ✖ Culex
2. ✖ Anopheles
3. ✔ Aedes
4. ✖ Sandfly

Question Number : 12 Question Id : 4410091537578 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Semi-quantitative urine culture is commonly done using:
Options :
1. ✖ Blood agar
2. ✔ CLED agar
3. ✖ Chocolate agar
4. ✖ Sabouraud agar

Question Number : 13 Question Id : 4410091522057 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In semi-quantitative urine analysis, "RE and C" refer to:
Options :
1. ✖ Red cell crystals
2. ✔ Routine examination and culture
3. ✖ Random excretion concentration
4. ✖ Renal excretion and clearance

Question Number : 14 Question Id : 4410091522071 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Diagnosis of diabetes mellitus is generally based on:
Options :
1. ✖ Serum creatinine
2. ✔ HbA1c
3. ✖ Hemoglobin
4. ✖ LDL

Question Number : 15 Question Id : 4410091537608 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The normal serum potassium (K^+) level in adults is:
Options :
1. ✖ 1.5 – 2.5 mEq/L
2. ✖ 2.5 – 3.5 mEq/L
3. ✔ 3.5 – 5.0 mEq/L
4. ✖ 5.5 – 7.0 mEq/L

Section B

Section Id :	4410091774412
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782856

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 4410091537635 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The moderator band is present in the:
Options :
1. ✖ Right atrium
2. ✖ Left atrium
3. ✔ Right ventricle
4. ✖ Left ventricle

Question Number : 17 Question Id : 4410091522111 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The great artery that supplies the blood to the whole body is known as:
Options :
1. ✖ Vena Cava
2. ✖ Cephalic Artery
3. ✔ Aorta
4. ✖ Coronary Artery

Question Number : 18 Question Id : 4410091522123 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The phase of cardiac cycle during which the ventricles relax is known as:
Options :
1. ✔ Diastole
2. ✖ Systole
3. ✖ Plateau
4. ✖ Bridging

Question Number : 19 Question Id : 4410091537646 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The artery that supplies the SA node in most individuals is:
Options :
1. ✖ Left anterior descending artery
2. ✖ Left circumflex artery
3. ✖ Posterior descending artery
4. ✔ Right coronary artery

Question Number : 20 Question Id : 4410091522174 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Anaesthetic agents are used to:
Options :
1. ✖ Lower blood pressure
2. ✖ Treat infections
3. ✔ Produce reversible loss of sensation
4. ✖ Improve appetite

Question Number : 21 Question Id : 4410091522160 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Sedatives are primarily used to:
Options :
1. ✖ Relieve pain only
2. ✖ Increase heart rate
3. ✔ Reduce anxiety and induce calmness
4. ✖ Decrease vomiting

Question Number : 22 Question Id : 4410091522187 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is sevoflurane?
Options :
1. ✖ Analgesic
2. ✖ Anaesthetic
3. ✔ Sedative
4. ✖ Muscle relaxant

Question Number : 23 Question Id : 4410091522193 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Analgesics are drugs that:
Options :
1. ✖ Induce sleep
2. ✔ Reduce pain
3. ✖ Decrease anxiety
4. ✖ Increase satiety

Question Number : 24 Question Id : 4410091537713 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Atropine primarily acts as a:
Options :
1. ✖ Beta-blocker
2. ✔ Parasympatholytic (anticholinergic)
3. ✖ Calcium channel blocker
4. ✖ ACE inhibitor

Question Number : 25 Question Id : 4410091522209 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A healthy cardiac diet should have enough amount of:
Options :
1. ✖ Trans fats
2. ✔ Fibers
3. ✖ Salt
4. ✖ Sour

Question Number : 26 Question Id : 4410091522215 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Smoking increases the risk of cardiac diseases by:
Options :
1. ✖ Reducing clot formation
2. ✖ Increasing HDL
3. ✔ Promoting atherosclerosis
4. ✖ Lowering blood pressure

Question Number : 27 Question Id : 4410091522230 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is the main natural chemical found in tobacco and cigarettes?
Options :
1. ✖ Thiamine
2. ✖ Biotine
3. ✔ Nicotine
4. ✖ Niacin

Question Number : 28 Question Id : 4410091522233 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Regular exercise improves cardiovascular health by:
Options :
1. ✖ Increasing triglycerides
2. ✔ Enhancing circulation
3. ✖ Causing arrhythmias
4. ✖ Raising blood pressure

Question Number : 29 Question Id : 4410091537759 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Rheumatic fever is caused by:
Options :
1. ✔ Streptococcus pyogenes
2. ✖ Staphylococcus aureus
3. ✖ Enterococcus faecalis
4. ✖ Mycobacterium tuberculosis

Question Number : 30 Question Id : 4410091537763 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
ELISA is a serological test used to detect:
Options :
1. ✔ Antibodies or antigens
2. ✖ Red blood cells
3. ✖ Platelet count
4. ✖ Electrolytes

Question Number : 31 Question Id : 4410091522279 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which is an ideal view to identify the organs situated anteriorly and posteriorly during cardiac catheterization?
Options :
1. ✖ AP 0 degree
2. ✖ LAO 10 degrees
3. ✖ RAO 10 degrees
4. ✔ LAO 90 degrees

Question Number : 32 Question Id : 4410091537782 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The control system in a cardiac cath lab primarily manages:
Options :
1. ✖ Blood pressure monitoring
2. ✖ Sterilization of catheters
3. ✖ ECG recording
4. ✔ Fluoroscopic imaging and X-ray output

Question Number : 33 Question Id : 4410091522267 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Radiation protection in cath labs include:
Options :
1. ✖ Removing all shields
2. ✖ Using bright lights
3. ✔ Restricting personnel exposure
4. ✖ Avoiding dosimeters

Question Number : 34 Question Id : 4410091537771 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which angiographic view is best for visualizing the left main coronary artery bifurcation into LAD and LCX?
Options :
1. ✖ RAO Cranial
2. ✔ LAO Caudal
3. ✖ AP View
4. ✖ Lateral View

Question Number : 35 Question Id : 4410091522476 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The QRS complex in a normal ECG represents:
Options :
1. ✖ Atrial contraction
2. ✔ Ventricular contraction
3. ✖ Ventricular repolarisation
4. ✖ AV node relaxation

Question Number : 36 Question Id : 4410091537792 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following are bipolar limb leads in a standard 12-lead ECG?
Options :
1. ✔ Leads I, II, III
2. ✖ Leads aVR, aVL, aVF
3. ✖ Leads V1, V2, V3
4. ✖ Leads V4, V5, V6

Question Number : 37 Question Id : 4410091537814 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A QRS duration >120 ms is generally indicative of:
Options :
1. ✖ Pericardial effusion
2. ✔ Bundle branch block
3. ✖ Sinus tachycardia
4. ✖ Atrial fibrillation

Question Number : 38 Question Id : 4410091537803 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The ECG finding of ST-segment elevation in contiguous leads is most indicative of:
Options :
1. ✔ Myocardial infarction
2. ✖ Pericardial effusion
3. ✖ Left ventricular hypertrophy
4. ✖ Bundle branch block

Question Number : 39 Question Id : 4410091522495 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Primary pulmonary hypertension on echocardiography shows which shape of the left ventricle?
Options :
1. ✖ A shape
2. ✖ B shape
3. ✖ C shape
4. ✔ D shape

Question Number : 40 Question Id : 4410091537818 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The most common type of hypertension is:
Options :
1. ✖ Secondary hypertension
2. ✖ White-coat hypertension
3. ✖ Malignant hypertension
4. ✔ Primary (essential) hypertension

Question Number : 41 Question Id : 4410091522488 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Myocardial disease primarily affects:
Options :
1. ✖ Outer layer of the heart
2. ✔ Muscles of the heart
3. ✖ Inner layer of the heart
4. ✖ All the layers of the heart

Question Number : 42 Question Id : 4410091522527 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
When using an AED, it is advised not to shock; what should you do?
Options :
1. ✖ Give shock manually
2. ✔ Continue CPR
3. ✖ Abort CPR
4. ✖ Ask for help

Question Number : 43 Question Id : 4410091537848 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The primary purpose of defibrillation is to:
Options :
1. ✔ Terminate life-threatening ventricular arrhythmias
2. ✖ Increase cardiac output
3. ✖ Treat atrial fibrillation permanently
4. ✖ Pulseless eletrical activity

Question Number : 44 Question Id : 4410091537860 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A defibrillator is NOT indicated in which of the following conditions?
Options :
1. ✖ Ventricular fibrillation
2. ✖ Pulseless ventricular tachycardia
3. ✔ Pulseless electrical activity
4. ✖ Torsades de pointes

Question Number : 45 Question Id : 4410091522504 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Defibrillation is used for:
Options :
1. ✖ Bradycardia
2. ✔ Ventricular fibrillation
3. ✖ Sinus tachycardia
4. ✖ Sinus arrhythmia

Question Number : 46 Question Id : 4410091522554 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Blood oximetry is used:
Options :
1. ✖ to measure Blood pressure
2. ✔ to measure Blood oxygen content
3. ✖ to measure Heart rate
4. ✖ to do ECG

Question Number : 47 Question Id : 4410091522558 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
IABP stands for:
Options :
1. ✔ Intraaortic balloon pump
2. ✖ Intravenous arterial blood pressure
3. ✖ Internal arterial blood pressure
4. ✖ Integrated arterial blood panel

Question Number : 48 Question Id : 4410091537877 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Pulmonary capillary wedge pressure (PCWP) reflects:
Options :
1. ✖ Pulmonary artery pressure
2. ✖ Aortic pressure
3. ✖ Right atrial pressure
4. ✔ Left atrial pressure

Question Number : 49 Question Id : 4410091522566 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
X-ray imaging in cath lab is used for:
Options :
1. ✖ ECG interpretation
2. ✔ Catheter visualisation
3. ✖ Drug administration
4. ✖ Bleeding detection

Question Number : 50 Question Id : 4410091537867 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which feature of an angiographic table allows optimal imaging angles?
Options :
1. ✖ Manual contrast injector
2. ✔ Tilting and rotation capabilities
3. ✖ Fixed flat surface only
4. ✖ Built-in ECG machine

West Bengal Health Recruitment Board

Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist CC
Subject Name :	Medical Technologist CC
Creation Date :	2026-01-13 12:39:23
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist CC

Group Number :	1
Group Id :	4410091754137
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks : 100

Section A

Section Id :	4410091775652
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	30
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091784097
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 1 Question Id : 4410091518691 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

The pulmonary veins drain blood into which chamber of the heart?

Options :

1. ✖ Right atrium
2. ✖ Pulmonary atrery
3. ✔ Left atrium
4. ✖ Left ventricle

Question Number : 2 Question Id : 4410091518769 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary function of the ureter?
Options :
1. ✔ To carry urine from kidneys to the urinary bladder
2. ✖ To carry urine from bladder to the urethra
3. ✖ To carry urine from right kidney to left kidney
4. ✖ to carry urine from nephron to the Kidney

Question Number : 3 Question Id : 4410091520395 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which plasma protein carries the largest proportion of circulating T_4?
Options :
1. ✖ Albumin
2. ✔ Thyroxine-binding globulin (TBG)
3. ✖ Transthyretin
4. ✖ Globulin A

Question Number : 4 Question Id : 4410091520409 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A right shift of the oxygen–hemoglobin dissociation curve indicates:
Options :
1. ✖ Increased affinity of Hb for O_2
2. ✖ Decreased release of O_2 to tissues
3. ✔ Increased release of O_2 to tissues
4. ✖ No change in O_2 delivery

Question Number : 5 Question Id : 4410091520422 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Anaemia is primarily defined as a reduction in:
Options :
1. ✖ White blood cell count
2. ✖ Blood glucose level
3. ✔ Oxygen-carrying capacity of blood
4. ✖ Platelet count

Question Number : 6 Question Id : 4410091518820 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
From which embryological tissue does the adrenal gland develop?
Options :
1. ✖ Ectoderm only
2. ✖ Mesoderm only
3. ✖ Endoderm only
4. ✔ Both Ectoderm and mesoderm

Question Number : 7 Question Id : 4410091521089 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In blood cross-matching, the recipient’s red blood cells or serum are mixed with:
Options :
1. ✖ Commercially prepared substances
2. ✖ Anti Rh factor
3. ✔ Red cells from the potential donor's blood
4. ✖ Different blood types

Question Number : 8 Question Id : 4410091521182 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to the Biomedical Waste Management Rules, 2016, which type of biomedical waste is disposed of in blue colour-coded containers?
Options :
1. ✖ Human anatomical waste
2. ✖ General waste
3. ✔ Glassware and metallic implants
4. ✖ Expired medicines

Question Number : 9 Question Id : 4410091521243 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to the Biomedical Waste Management Rules, 2016, healthcare waste is segregated into how many colour-coded disposal categories?
Options :
1. ✖ 8
2. ✖ 2
3. ✔ 4
4. ✖ 3

Question Number : 10 Question Id : 4410091520431 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Maximum permissible time for storing biomedical waste on hospital premises is:
Options :
1. ✖ 2 hours
2. ✖ 12 hours
3. ✖ 24 hours
4. ✔ 48 hours

Question Number : 11 Question Id : 4410091520445 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In RNTCP, diagnosis of pulmonary TB was primarily based on:
Options :
1. ✖ Chest X-ray
2. ✔ Sputum smear microscopy
3. ✖ GeneXpert
4. ✖ Mantoux Test

Question Number : 12 Question Id : 4410091520446 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
If a delay in processing urine is expected, the sample should be:
Options :
1. ✖ Kept at room temperature
2. ✖ Frozen immediately
3. ✔ Refrigerated at 4°C
4. ✖ Exposed to sunlight

Question Number : 13 Question Id : 4410091561537 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which condition may give a false-negative nitrite test?
Options :
1. ✖ Long bladder incubation time
2. ✖ Presence of gram-negative bacteria
3. ✖ High nitrate diet
4. ✔ Short bladder incubation time

Question Number : 14 Question Id : 4410091561570 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following increases urine glucose without increasing plasma glucose?
Options :
1. ✖ High carbohydrate intake
2. ✔ Pregnancy
3. ✖ Insulin therapy
4. ✖ Fasting

Question Number : 15 Question Id : 4410091561550 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The major biochemical cause of post-prandial hyperglycemia in type 2 diabetes is:
Options :
1. ✖ Increased hepatic glucose uptake
2. ✖ Excess insulin secretion
3. ✔ Reduced first-phase insulin release
4. ✖ Increased renal glucose loss

Section B

Section Id :	4410091775653
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091784098

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 4410091520476 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which complication can occur if a chest tube is inserted too inferiorly (below 8th rib)?
Options :
1. ✖ Brain hematoma
2. ✔ Liver or spleen laceration
3. ✖ Pulmonary contusion
4. ✖ Pneumonia

Question Number : 17 Question Id : 4410091520468 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Aerosol therapy is generally avoided in patients with which of the following conditions?
Options :
1. ✖ Mild cough
2. ✔ Active hemoptysis
3. ✖ Upper respiratory infection
4. ✖ Controlled asthma

Question Number : 18 Question Id : 4410091520469 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
PEEP is used in mechanical ventilation primarily to:
Options :
1. ✖ Reduce tidal volume
2. ✔ Increase functional residual capacity
3. ✖ Increase dead space
4. ✖ Reduce inspiratory time

Question Number : 19 Question Id : 4410091520477 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Isolation precautions for a patient with Clostridioides difficile should include:
Options :
1. ✖ Airborne precautions
2. ✖ Droplet precautions
3. ✔ Contact precautions
4. ✖ N95 mask only

Question Number : 20 Question Id : 4410091520478 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A patient with HIV refuses to inform their spouse. The doctor is uncertain whether to keep confidentiality or warn the partner. This is an example of:
Options :
1. ✔ Ethical conflict
2. ✖ Negligence
3. ✖ Malpractice
4. ✖ Futility

Question Number : 21 Question Id : 4410091561746 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In ACLS the recommended chest compression rate for adults is:
Options :
1. ✖ 60–80/min
2. ✖ 80–100/min
3. ✔ 100–120/min
4. ✖ >140/min

Question Number : 22 Question Id : 4410091520479 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which condition is most commonly treated with daily chest physiotherapy?
Options :
1. ✖ Pulmonary embolism
2. ✔ Cystic fibrosis
3. ✖ Pneumothorax
4. ✖ Tuberculosis

Question Number : 23 Question Id : 4410091561872 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which bundle-based approach helps reduce ventilator-associated pneumonia (VAP)?
Options :
1. ✖ Frequent ventilator circuit changes irrespective of need
2. ✔ Head-of-bed elevation, daily readiness to wean, oral care, subglottic suction
3. ✖ Routinely broad-spectrum antibiotics for all ventilated patients
4. ✖ Only sterilizing ventilator tubing once a week

Question Number : 24 Question Id : 4410091575190 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A temporary transvenous pacemaker works primarily by:
Options :
1. ✔ Delivering electrical impulses to stimulate myocardial depolarization
2. ✖ Detecting blood pressure changes to contract the heart
3. ✖ Cooling myocardium to slow heart rate
4. ✖ Delivering mechanical shocks like a defibrillator

Question Number : 25 Question Id : 4410091520481 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Multimodality bedside monitors can simultaneously monitor all, EXCEPT:
Options :
1. ✖ Electrocardiogram
2. ✖ Saturation of oxygen
3. ✔ Blood glucose
4. ✖ End-tidal CO_2

Question Number : 26 Question Id : 4410091520482 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Synchronized cardioversion is primary used for:
Options :
1. ✖ Ventricular fibrillation
2. ✖ Pulseless VT
3. ✔ Supraventricular tachycardia
4. ✖ Asystole

Question Number : 27 Question Id : 4410091575230 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a common ICU indication for bronchoscopy?
Options :
1. ✖ Routine lung screening in stable patients
2. ✔ Removal of mucus plugs causing lobar atelectasis
3. ✖ Diagnosis of hypertension
4. ✖ Monitoring ventilator tidal volume

Question Number : 28 Question Id : 4410091575385 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which organism is used as a biological indicator for testing steam sterilization effectiveness?
Options :
1. ✖ Bacillus atrophaeus
2. ✔ Geobacillus stearothermophilus
3. ✖ Clostridium botulinum
4. ✖ Staphylococcus aureus

Question Number : 29 Question Id : 4410091520495 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which enzyme is commonly used in glucometer test strips?
Options :
1. ✖ Lactate dehydrogenase
2. ✔ Glucose oxidase or glucose dehydrogenase
3. ✖ Hexokinase
4. ✖ Catalase

Question Number : 30 Question Id : 4410091520497 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Huff cough technique is used to:
Options :
1. ✖ Reduce lung compliance
2. ✔ Expel mobilized secretions
3. ✖ Measure FEV1
4. ✖ Administer oxygen

Question Number : 31 Question Id : 4410091520504 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Corrective maintenance is performed:
Options :
1. ✖ On a fixed schedule
2. ✔ After equipment failure
3. ✖ Based on diagnostic monitoring
4. ✖ Daily

Question Number : 32 Question Id : 4410091575698 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a key caution when using a central monitoring system in an ICU?
Options :
1. ✖ Place monitors too close to patient to reduce wiring
2. ✖ Ignore alarm settings during routine care
3. ✔ Ensure proper lead placement and regular calibration
4. ✖ Only monitor patients during night shifts

Question Number : 33 Question Id : 4410091520527 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What do filters in the ventilator circuit help in preventing?
Options :
1. ✔ Cross-contamination between patient and ventilator
2. ✖ High tidal volume delivery
3. ✖ Alarm malfunction
4. ✖ Positive End-Expiratory Pressure changes

Question Number : 34 Question Id : 4410091520524 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Weaning from mechanical ventilation is often done using:
Options :
1. ✖ SIMV
2. ✔ CPAP
3. ✖ PCV with high pressure
4. ✖ Full control mode only

Question Number : 35 Question Id : 4410091520534 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Capnography in ventilator monitoring is used to:
Options :
1. ✔ Measure end-tidal CO_2
2. ✖ Measure tidal volume
3. ✖ Measure FiO_2
4. ✖ Measure heart rate

Question Number : 36 Question Id : 4410091575739 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During initiation of mechanical ventilation, which of the following is the most critical step to prevent barotrauma?
Options :
1. ✖ Setting the highest possible tidal volume for patient comfort
2. ✔ Adjusting inspiratory pressure and tidal volume according to lung compliance
3. ✖ Turning off alarms to reduce false triggers
4. ✖ Increasing respiratory rate beyond normal limits

Question Number : 37 Question Id : 4410091520541 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A sudden drop in suction pressure during procedure may indicate:
Options :
1. ✔ Leak in suction tubing or loose canister lid
2. ✖ Patient hypoxia
3. ✖ Normal machine operation
4. ✖ High ventilator PEEP

Question Number : 38 Question Id : 4410091576884 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During an ICU ECG, Lead II shows intermittent flat lines while other leads are normal. What is the most likely cause?
Options :
1. ✖ Patient movement artifact
2. ✔ Disconnected or loose electrode for Lead II
3. ✖ Faulty ECG machine power supply
4. ✖ Low battery in the defibrillator

Question Number : 39 Question Id : 4410091576896 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
While preparing an ICU ventilator for a new patient, the ventilator alarm shows “Low Oxygen Supply”. Which is the first troubleshooting step according to standard procedure?
Options :
1. ✖ Switch to manual ventilation immediately
2. ✔ Check oxygen source connections and cylinder/central supply
3. ✖ Increase ventilator tidal volume
4. ✖ Reduce patient’s FiO_2 to 21%

Question Number : 40 Question Id : 4410091520522 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Laboratory marker for decreased GFR is:
Options :
1. ✔ Serum creatinine
2. ✖ Hemoglobin
3. ✖ Platelet count
4. ✖ Bilirubin

Question Number : 41 Question Id : 4410091520519 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Critical potassium levels in renal failure patients can cause:
Options :
1. ✔ Cardiac arrhythmias
2. ✖ Liver failure
3. ✖ Hypertension
4. ✖ Hypoglycemia

Question Number : 42 Question Id : 4410091576959 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During surgery, an arterial blood gas (ABG) sample is drawn but shows unexpectedly high pCO_2 compared to clinical signs. Which is the most likely cause related to procedure/equipment?
Options :
1. ✔ Sample left at room temperature for too long
2. ✖ Patient hypoventilation
3. ✖ Incorrect oxygen delivery
4. ✖ Faulty ventilator settings

Question Number : 43 Question Id : 4410091520515 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the parameters is not typically included in the ABG analysis?
Options :
1. ✖ HCO_3^-
2. ✖ Lactate
3. ✖ Glucose
4. ✔ HbA1c

Question Number : 44 Question Id : 4410091520514 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Direct ISE measures:
Options :
1. ✔ Ion activity in undiluted sample
2. ✖ Ion concentration in diluted sample
3. ✖ Only sodium concentration
4. ✖ Only chloride concentration

Question Number : 45 Question Id : 4410091520513 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Calibration solutions are used to:
Options :
1. ✔ Set baseline for accurate measurement
2. ✖ Clean the analyzer
3. ✖ Replace reagents
4. ✖ Test software functions only

Question Number : 46 Question Id : 4410091579170 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A 65-year-old ICU patient on a bedside monitor shows intermittent loss of QRS complexes on the ECG waveform, but the patient remains hemodynamically stable. Which of the following is the most likely cause?
Options :
1. ✖ Myocardial infarction causing transient asystole
2. ✔ Loose or improperly attached ECG electrodes
3. ✖ Incorrect ECG filter setting causing ST-segment distortion
4. ✖ Ventricular pacing spike misinterpretation by the monitor

Question Number : 47 Question Id : 4410091579392 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
When setting up a bedside monitor for a critically ill patient, which of the following equipment is essential to ensure continuous cardiac monitoring?
Options :
1. ✔ ECG electrodes and leads
2. ✖ Pulse oximeter probe
3. ✖ Central venous catheter
4. ✖ Arterial line

Question Number : 48 Question Id : 4410091520510 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Plethysmograph waveform represents:
Options :
1. ✔ Blood oxygen saturation
2. ✖ Blood pressure
3. ✖ Heart rate
4. ✖ Respiratory rate

Question Number : 49 Question Id : 4410091579422 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a key procedure when setting up a patient on a central monitoring system in an ICU?
Options :
1. ✔ Ensuring proper placement of sensors and calibration of bedside monitors
2. ✖ Administering IV fluids before connecting to the monitor
3. ✖ Only monitoring one patient per central monitor
4. ✖ Using the central monitor without verifying bedside monitor accuracy

Question Number : 50 Question Id : 4410091520507 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Patient confidentiality during recording is important because:
Options :
1. ✖ It prevents data loss
2. ✔ It ensures privacy and legal compliance
3. ✖ It increases efficiency
4. ✖ It gives information quickly

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Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist Dialysis
Subject Name :	Medical Technologist Dialysis
Creation Date :	2026-01-13 12:40:52
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist Dialysis

Group Number :	1
Group Id :	4410091752940
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks : 100

Section A

Section Id :	4410091774432
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	30
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782876
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 1 Question Id : 4410091508181 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

Which of the following best describes the main difference between plasma and serum?

Options :

1. ✖ Plasma lacks clotting factors, while serum contains them
2. ✔ Serum lacks clotting factors, while plasma contains them
3. ✖ Plasma contains red blood cells, while serum does not
4. ✖ Serum contains fibrinogen, while plasma does not

Question Number : 2 Question Id : 4410091508191 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following correctly describes the lifespan of circulating platelets?
Options :
1. ✖ 2–3 days
2. ✔ 7–10 days
3. ✖ 20–25 days
4. ✖ 30–35 days

Question Number : 3 Question Id : 4410091508218 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A major blood cross matching is performed by mixing of:
Options :
1. ✖ Donor plasma with donor RBCs
2. ✖ Recipient plasma with recipient RBCs
3. ✔ Recipient plasma with donor RBCs
4. ✖ Donor plasma with recipient RBCs

Question Number : 4 Question Id : 4410091522777 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a primary cause of anemia?
Options :
1. ✖ Congestive heart failure causing tissue hypoxia
2. ✖ Dehydration increasing hematocrit
3. ✔ Chronic kidney disease reducing erythropoietin production
4. ✖ Pulmonary embolism causing ventilation–perfusion mismatch

Question Number : 5 Question Id : 4410091589938 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
If a doctor is examining a patient's thyroid gland, how many distinct lobes should they expect to assess?
Options :
1. ✖ One lobe
2. ✔ Two lobes
3. ✖ Three lobes
4. ✖ Four lobes

Question Number : 6 Question Id : 4410091522758 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which structural adaptation maximizes the RBC's surface area for gas exchange?
Options :
1. ✔ Biconcave shape
2. ✖ Presence of microvilli
3. ✖ Spherical morphology
4. ✖ Thick cytoplasmic core

Question Number : 7 Question Id : 4410091522769 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following options correctly describes the blood group O^+?
Options :
1. ✖ Only A antigen present, Rh absent.
2. ✔ No A or B antigens on RBCs, but Rh factor present.
3. ✖ Both A and B antigens present, Rh present.
4. ✖ Only B antigen present, Rh absent.

Question Number : 8 Question Id : 4410091508257 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to the Biomedical Waste Management Rules (2016), waste such as used syringes and AV tubing after disinfection should be placed in which category?
Options :
1. ✖ Yellow category
2. ✔ Red category
3. ✖ White (translucent) category
4. ✖ Blue category

Question Number : 9 Question Id : 4410091522837 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Direct health impacts of biomedical waste mainly result from:
Options :
1. ✖ Air pollution in the city
2. ✖ Noise from hospital equipment
3. ✖ Foul odor in the community
4. ✔ Exposure to infectious materials and sharps

Question Number : 10 Question Id : 4410091522819 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which concept ensures biomedical waste is handled appropriately according to its composition?
Options :
1. ✖ Centralized mixing of all waste
2. ✔ Source-wise segregation into defined categories
3. ✖ Disposal without prior classification
4. ✖ Treating all liquid waste as hazardous

Question Number : 11 Question Id : 4410091522876 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Under the Universal Immunization Programme (UIP), which groups are primarily targeted?
Options :
1. ✖ Urban workforce only
2. ✖ Teenagers in schools
3. ✔ Infants, children, and pregnant women
4. ✖ Only adults above 50 years

Question Number : 12 Question Id : 4410091508331 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In routine urine testing, “R/E” stands for:
Options :
1. ✖ Renal evaluation
2. ✔ Routine examination of physical and microscopic parameters
3. ✖ Rapid enzyme test
4. ✖ Reactive elements in urine

Question Number : 13 Question Id : 4410091522910 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In semi-quantitative urine analysis, significant bacteriuria is usually indicated by:
Options :
1. ✖ Any bacterial growth
2. ✔ $\geq 10^5$ CFU/mL
3. ✖ Urine pH above 7
4. ✖ Pure culture morphology only

Question Number : 14 Question Id : 4410091508351 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to the ADA criteria, a normal fasting plasma glucose (FPG) level in adults is:
Options :
1. ✖ 70–90 mg/dL
2. ✔ 70–99 mg/dL
3. ✖ 100–125 mg/dL
4. ✖ ≥126 mg/dL

Question Number : 15 Question Id : 4410091522929 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Normal serum potassium level is:
Options :
1. ✖ 2.5–3.5 mmol/L
2. ✔ 3.5–5.0 mmol/L
3. ✖ 4.5–6.0 mmol/L
4. ✖ 5.0–6.5 mmol/L

Section B

Section Id :	4410091774433
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782877

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 4410091508408 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which part of the nephron is primarily responsible for the maximum reabsorption of glucose, amino acids, and sodium?
Options :
1. ✖ Distal convoluted tubule
2. ✔ Proximal convoluted tubule
3. ✖ Loop of Henle (descending limb)
4. ✖ Collecting duct

Question Number : 17 Question Id : 4410091508432 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is the earliest marker of glomerular damage in diabetic nephropathy?
Options :
1. ✖ Elevated BUN
2. ✔ Microalbuminuria
3. ✖ Hyperkalemia
4. ✖ Increased serum creatinine

Question Number : 18 Question Id : 4410091522996 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary consequence of deranged kidney function?
Options :
1. ✖ Polycythemia
2. ✖ Excessive water loss
3. ✖ Increased vitamin D activation
4. ✔ Waste and electrolyte imbalance

Question Number : 19 Question Id : 4410091508416 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The juxtaglomerular apparatus (JGA) plays a key role in regulating:
Options :
1. ✖ Calcium reabsorption
2. ✖ Erythropoietin secretion
3. ✔ Blood pressure through renin release
4. ✖ Filtration of proteins at the glomerulus

Question Number : 20 Question Id : 4410091508474 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What happens to solute clearance if blood flow rate is increased from 200 mL/min to 300 mL/min during hemodialysis?
Options :
1. ✖ Clearance decreases due to membrane saturation
2. ✔ Clearance increases but plateaus due to dialyzer mass-transfer limits
3. ✖ Clearance increases linearly without limit
4. ✖ Clearance becomes independent of blood flow

Question Number : 21 Question Id : 4410091523021 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
How does anticoagulant dialysate primarily work during hemodialysis?
Options :
1. ✖ Increasing systemic heparin levels
2. ✖ Inhibiting platelet production
3. ✔ Chelating calcium locally in the circuit
4. ✖ Shortening dialysis sessions

Question Number : 22 Question Id : 441009827654 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which part of the HD machine pumps blood?
Options :
1. ✖ Ultrafiltration module
2. ✖ Conductivity sensor
3. ✔ Peristaltic pump
4. ✖ Heparin pump

Question Number : 23 Question Id : 441009827582 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Dialysate is made by mixing of?
Options :
1. ✖ Blood and saline
2. ✔ Acid and bicarbonate concentrates with purified water
3. ✖ Glucose and water
4. ✖ Formalin and saline

Question Number : 24 Question Id : 441009827696 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Improper mixing of dialysate concentrate can lead to?
Options :
1. ✖ Hypotension
2. ✔ Electrolyte imbalance
3. ✖ Clotting in dialyzer
4. ✖ Air embolism

Question Number : 25 Question Id : 4410091508698 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following best describes the primary purpose of hemodialysis?
Options :
1. ✖ To increase urine output by stimulating nephrons
2. ✔ To remove waste products and excess fluid
3. ✖ To increase erythropoietin production
4. ✖ To correct acidosis through hormonal regulation

Question Number : 26 Question Id : 4410091523108 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which type of dialyzer membrane is synthetic and highly biocompatible?
Options :
1. ✖ Cuprophane
2. ✖ Cellulose
3. ✔ Polysulfone
4. ✖ Modified cellulose

Question Number : 27 Question Id : 4410091508827 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is considered the initial requirement before a patient enters the hemodialysis unit for a dialysis session?
Options :
1. ✖ Completing a chest X-ray
2. ✔ Verifying the patient’s identity
3. ✖ Administering IV antibiotics
4. ✖ Performing an ECG

Question Number : 28 Question Id : 4410091525519 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During HD initiation, the venous pressure rises sharply. What is the most likely cause and immediate action?
Options :
1. ✖ Air in arterial line; clamp and remove air
2. ✔ Obstruction in venous line; stop pump, check and correct and continue
3. ✖ Low dialysate temperature; increase gradually
4. ✖ Clot from low heparin in Dialyzer; increase heparin dosage

Question Number : 29 Question Id : 4410091523179 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which routine HD unit check prevents chemical and microbial contamination?
Options :
1. ✖ Pre-dialysis BP
2. ✖ Ultrafiltration volume
3. ✖ Patient weight
4. ✔ Dialysate and water quality

Question Number : 30 Question Id : 4410091523202 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the appropriate role of a staff/caregiver during a dialysis practical?
Options :
1. ✔ Supervise circuit management and handle complications
2. ✖ Only observe
3. ✖ Focus on theory only
4. ✖ Perform ignoring safety

Question Number : 31 Question Id : 4410091525297 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which complication is frequently seen in online HDF due to high convection volume?
Options :
1. ✖ Hypothermia
2. ✔ Hypophosphatemia
3. ✖ Hyperkalemia
4. ✖ Air embolism

Question Number : 32 Question Id : 4410091516393 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During dialysis turnover between two patients, which step is ESSENTIAL to prevent cross-contamination?
Options :
1. ✖ Changing dialyzer only and washing the dialysis unit
2. ✔ Wiping external machine surfaces with 70% alcohol or approved disinfectant
3. ✖ Performing only internal disinfection of the dialysis machine
4. ✖ Changing the bloodlines but not disinfecting the chair or bed

Question Number : 33 Question Id : 4410091516516 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The MOST appropriate indication for choosing Continuous Slow Hemodialysis SLED over intermittent hemodialysis is:
Options :
1. ✖ A stable outpatient requiring routine thrice-weekly HD
2. ✔ A patient with chronic hypotension and hemodynamic instability
3. ✖ A patient needing rapid potassium removal within 1 hour
4. ✖ A pediatric patient requiring peritoneal dialysis

Question Number : 34 Question Id : 4410091516686 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During the actual conduction of hemodialysis, which parameter must be monitored MOST frequently to ensure patient safety?
Options :
1. ✖ Serum calcium level
2. ✔ Blood pressure and HR
3. ✖ Hemoglobin level
4. ✖ Dialyzer reuse number

Question Number : 35 Question Id : 4410091525277 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A patient develops hypotension and wheezing within minutes of heparin administration. What is the most likely complication?
Options :
1. ✖ Heparin Induced Thrombocytopenia
2. ✖ Heparin rebound
3. ✔ Heparin anaphylactoid reaction
4. ✖ Heparin resistance

Question Number : 36 Question Id : 4410091525339 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Prolonged post-dialysis bleeding with a normal Activated Clotting Time is most likely due to:
Options :
1. ✖ Heparin underdose
2. ✔ Platelet dysfunction from heparin
3. ✖ Dialysate Mg issue
4. ✖ Circuit clotting

Question Number : 37 Question Id : 4410091525388 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main advantage of using pre-dilution replacement fluid in continuous hemofiltration?
Options :
1. ✔ Reduces blood viscosity and lowers the risk of filter clotting
2. ✖ Increases solute clearance more than post-dilution
3. ✖ Increases hemoconcentration inside the filter
4. ✖ Eliminates the need for anticoagulation

Question Number : 38 Question Id : 4410091525422 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which fluid is essential for replacement in Continuous Renal Replacement Therapy?
Options :
1. ✖ Normal saline used for IV cannulation
2. ✖ Peritoneal dialysate
3. ✔ Replacement fluid
4. ✖ Sterile water

Question Number : 39 Question Id : 4410091525351 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which value best indicates an adequate hemodialysis dose?
Options :
1. ✖ Kt/V 0.8
2. ✖ URR 55%
3. ✔ Kt/V $\geq$ 1.2 per session
4. ✖ Duration < 2 hours

Question Number : 40 Question Id : 4410091525365 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which value indicates an inadequate hemodialysis dose according to urea kinetic modeling?
Options :
1. ✖ URR ≥ 70%
2. ✖ spKt/V ≥ 1.4
3. ✔ spKt/V < 1.2
4. ✖ eKt/V ≥ 1.05

Question Number : 41 Question Id : 4410091525407 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which feature is characteristic of Continuous Veno Venous Hemofiltration?
Options :
1. ✖ Solute removal occurs primarily by diffusion
2. ✖ Ultrafiltration is driven by the patient’s venous pressure
3. ✔ Solute removal occurs mainly by convection using replacement fluid
4. ✖ Therapy is performed intermittently for 3–4 hours

Question Number : 42 Question Id : 4410091525417 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which characteristic best defines Continuous Hemodiafiltration?
Options :
1. ✔ Slow, steady solute and fluid removal using convection and diffusion
2. ✖ Rapid fluid removal using diffusion and osmosis
3. ✖ No anticoagulation needed
4. ✖ Done only at night

Question Number : 43 Question Id : 4410091525453 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which factor primarily determines solute removal efficiency in peritoneal dialysis?
Options :
1. ✖ Blood pressure and heart rate
2. ✖ Dialysate volume only
3. ✔ Concentration gradient and dwell time
4. ✖ Type of heparin used

Question Number : 44 Question Id : 4410091525481 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the most important step to prevent infection during PD catheter insertion?
Options :
1. ✔ Strict aseptic technique and skin prep
2. ✖ Choosing correct catheter length
3. ✖ Post-procedure antibiotics
4. ✖ Securing catheter with sutures

Question Number : 45 Question Id : 4410091525441 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
How does glucose in peritoneal dialysis fluid primarily cause ultrafiltration?
Options :
1. ✖ By increasing lymphatic drainage
2. ✔ By creating an osmotic gradient
3. ✖ By active glucose transport into capillaries
4. ✖ By raising interstitial hydrostatic pressure

Question Number : 46 Question Id : 4410091525465 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which PD catheter reduces the risk of tip migration and malposition?
Options :
1. ✖ Straight intraperitoneal segment
2. ✖ Short subcutaneous tunnel
3. ✔ Coiled intraperitoneal segment
4. ✖ Medial exit site

Question Number : 47 Question Id : 4410091525489 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A CAPD patient has cloudy effluent and mild abdominal pain, but a normal exit site. What is the most likely complication?
Options :
1. ✖ Hernia
2. ✖ Catheter obstruction
3. ✖ Encapsulating peritoneal sclerosis
4. ✔ Peritonitis

Question Number : 48 Question Id : 4410091508839 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is considered the MOST critical step in preventing cross-contamination within a dialysis unit?
Options :
1. ✖ Using room fresheners between patients during haemodialysis therapy
2. ✔ Maintaining strict hand hygiene before and after touching a patient
3. ✖ Opening windows regularly and switch on fans
4. ✖ Wearing double gloves throughout the shift

Question Number : 49 Question Id : 4410091525534 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During PD, the dialysate flows slowly, and the patient has mild abdominal discomfort. What should be the first action?
Options :
1. ✖ Force dialysate in
2. ✖ Increase flow rate
3. ✔ Stop, check catheter and patient position
4. ✖ Drain and terminate PD

Question Number : 50 Question Id : 4410091523185 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The best practice to prevent infections in a dialysis unit is:
Options :
1. ✔ Disinfect + hand hygiene & PPE
2. ✖ Hand hygiene only
3. ✖ Hand sanitizer alone
4. ✖ Patient cleaning

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Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist ECG
Subject Name :	Medical Technologist ECG
Creation Date :	2026-01-13 12:41:32
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist ECG

Group Number :	1
Group Id :	4410091752964
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks : 100

Section A

Section Id : 4410091774457
Section Number : 1
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 15
Number of Questions to be attempted : 15
Section Marks : 30
Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 4410091782901
Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 1 Question Id : 4410091510698 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

Which heart chamber receives oxygenated blood directly from the pulmonary veins?

Options :

1. ✔ Left atrium
2. ✖ Right atrium
3. ✖ Left ventricle
4. ✖ Right ventricle

Question Number : 2 Question Id : 4410091510772 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements accurately distinguishes serum from plasma?
Options :
1. ✖ Serum contains clotting factors; plasma does not
2. ✔ Serum lacks clotting factors; plasma contains them
3. ✖ Serum contains RBCs; plasma does not
4. ✖ Serum contains only WBCs; plasma does not

Question Number : 3 Question Id : 4410091510776 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Platelets are derived from the cytoplasm of which bone marrow cell?
Options :
1. ✖ Lymphoblast
2. ✔ Megakaryocyte
3. ✖ Myeloblast
4. ✖ Proerythroblast

Question Number : 4 Question Id : 4410091512167 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements correctly defines the Heart rate?
Options :
1. ✖ The amount of blood pumped by the heart per minute.
2. ✔ The number of times the heart beats per minute.
3. ✖ The pressure of blood in the arteries.
4. ✖ The volume of oxygen in the blood.

Question Number : 5 Question Id : 4410091512212 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main pathological feature of aplastic anaemia?
Options :
1. ✖ Increased production of abnormal red blood cells
2. ✔ Bone marrow suppression leading to pancytopenia
3. ✖ Excessive iron deposition in the bone marrow
4. ✖ Autoimmune destruction of mature blood cells in the periphery

Question Number : 6 Question Id : 4410091510710 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The detrusor muscle present in the urinary bladder is formed mainly by:
Options :
1. ✔ Smooth muscle arranged in spiral bundles
2. ✖ Voluntary skeletal muscle
3. ✖ Cardiac muscle fibers
4. ✖ Elastic fibers only

Question Number : 7 Question Id : 4410091512152 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a function of hormones released by the adrenal cortex?
Options :
1. ✖ Regulating the sleep-wake cycle
2. ✔ Controlling blood pressure and salt balance
3. ✖ Stimulating the thyroid gland
4. ✖ Increasing heart rate during a stress response

Question Number : 8 Question Id : 4410091510780 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which biomedical waste category includes human and animal anatomical waste?
Options :
1. ✔ Yellow
2. ✖ Red
3. ✖ Blue
4. ✖ Black

Question Number : 9 Question Id : 4410091511976 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following bloodborne pathogens carries the highest risk of transmission after a single contaminated needlestick injury if the exposed person is unvaccinated?
Options :
1. ✖ Human Immunodeficiency Virus
2. ✔ Hepatitis B virus
3. ✖ Herpes simplex virus
4. ✖ Hepatitis A virus

Question Number : 10 Question Id : 4410091510788 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which group is considered at highest risk for exposure to biomedical waste hazards?
Options :
1. ✖ Hospital laundry workers
2. ✔ Healthcare workers in direct patient care
3. ✖ Visitors in hospital corridors
4. ✖ Administrative staff

Question Number : 11 Question Id : 4410091515932 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which vaccine is administered at birth as part of the Universal Immunization Programme?
Options :
1. ✖ Measles-Rubella (MR)
2. ✖ Diphtheria, Pertussis, Tetanus (DPT)
3. ✔ Bacille Calmette-Guerin (BCG)
4. ✖ Injectable Polio Vaccine (IPV)

Question Number : 12 Question Id : 4410091520043 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In urine microscopy, RE and C stands for:
Options :
1. ✖ Renal elements & casts
2. ✔ Red elements & cells
3. ✖ Renal enzymes & crystals
4. ✖ Residual elements & colonies

Question Number : 13 Question Id : 4410091512029 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following microorganisms is NOT a common cause of urinary tract infections?
Options :
1. ✖ Escherichia coli
2. ✖ Klebsiella pneumoniae
3. ✔ Staphylococcus aureus
4. ✖ Proteus mirabilis

Question Number : 14 Question Id : 4410091520054 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Normal total serum calcium level in adults is approximately:
Options :
1. ✖ 3–5 mg/dL
2. ✔ 8.5–10.5 mg/dL
3. ✖ 12–14 mg/dL
4. ✖ 15–20 mg/dL

Question Number : 15 Question Id : 4410091512076 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the term used to describe the blood in the urine that is visible to the naked eye, often making the urine appear pink, red, or brown?
Options :
1. ✖ Microscopic hematuria
2. ✖ Non-visible hematuria
3. ✔ Gross hematuria
4. ✖ Pseudohematuria

Section B

Section Id :	4410091774458
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782902

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 441009753413 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Cross section of Right ventricular cavity is
Options :
1. ✔ Crescent
2. ✖ Bullet
3. ✖ Funnel
4. ✖ Circle

Question Number : 17 Question Id : 441009753423 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Skeleton of the heart is
Options :
1. ✖ Bony
2. ✔ Fibrous
3. ✖ Cartilaginous
4. ✖ Heart has no Skeleton

Question Number : 18 Question Id : 4410091515541 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main function of the left ventricle?
Options :
1. ✖ To pump deoxygenated blood to the lungs
2. ✖ To receive deoxygenated blood from the body
3. ✔ To pump oxygenated blood to the entire body
4. ✖ To pump oxygenated blood to the lungs

Question Number : 19 Question Id : 4410091515574 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What type of blood do the pulmonary veins normally carry?
Options :
1. ✖ Deoxygenated blood
2. ✖ Blood with PO2 below 50 mm Hg
3. ✔ Oxygenated blood
4. ✖ Mixed blood

Question Number : 20 Question Id : 4410091515596 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following functions is primarily associated with the pons?
Options :
1. ✖ Regulating body temperature homeostasis
2. ✖ Controlling voluntary muscle movements
3. ✔ Regulating respiration and the sleep cycle
4. ✖ Processing visual and auditory information

Question Number : 21 Question Id : 4410091515621 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
At which vertebral level does the trachea typically branch or bifurcate into the right and left primary bronchi?
Options :
1. ✖ First thoracic vertebra
2. ✖ Third thoracic vertebra
3. ✔ Fifth thoracic vertebra
4. ✖ Seventh cervical vertebra

Question Number : 22 Question Id : 4410091520222 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which blood vessels contain valves to prevent backflow?
Options :
1. ✖ Arteries
2. ✖ Capillaries
3. ✔ Veins
4. ✖ Arterioles

Question Number : 23 Question Id : 4410091520226 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which organ receives the highest percentage of resting cardiac output?
Options :
1. ✖ Kidney
2. ✖ Heart
3. ✖ Brain
4. ✔ Liver

Question Number : 24 Question Id : 4410091515690 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which physiological parameter is monitored using a pulse oximeter that typically attaches to the patient's fingertip or earlobe?
Options :
1. ✖ Invasive Arterial Blood Pressure
2. ✖ Fractional Exhaled Oxygen
3. ✖ End-tidal Carbon Dioxide
4. ✔ Oxygen Saturation

Question Number : 25 Question Id : 4410091515671 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following changes will increase the current sensitivity of a moving coil galvanometer?
Options :
1. ✖ Increasing the torsional constant of the suspension wire
2. ✔ Increasing the number of turns in the coil
3. ✖ Decreasing the magnetic field strength
4. ✖ Decreasing the area of the coil

Question Number : 26 Question Id : 4410091520239 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to Einthoven's law:
Options :
1. ✔ Lead I + Lead III = Lead II
2. ✖ Lead I + Lead II = Lead III
3. ✖ Lead II + Lead III = Lead I
4. ✖ Lead III – Lead I = Lead II

Question Number : 27 Question Id : 4410091520254 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A cardiac monitor displays:
Options :
1. ✖ Only heart sounds
2. ✔ Continuous ECG tracing
3. ✖ Lung function
4. ✖ Electrolyte levels

Question Number : 28 Question Id : 4410091520256 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In ECG, the ventricular pacing typically produces a:
Options :
1. ✖ Narrow QRS
2. ✔ Wide QRS
3. ✖ Absent QRS
4. ✖ Tall P wave

Question Number : 29 Question Id : 4410091520241 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A pacemaker impulse appears on ECG as a:
Options :
1. ✖ Wide T wave
2. ✔ Sharp vertical spike
3. ✖ Flat line
4. ✖ Broad P wave

Question Number : 30 Question Id : 4410091520245 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Current through ECG leads depends on:
Options :
1. ✔ Voltage and resistance
2. ✖ Only voltage
3. ✖ Only resistance
4. ✖ Electrolytes only

Question Number : 31 Question Id : 441009219849 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Name the ECG criteria for LVH.
Options :
1. ✖ Dominant R wave
2. ✖ Right axis deviation
3. ✖ P pulmonale
4. ✔ Tall R wave greater than 25 mm in V5, V6

Question Number : 32 Question Id : 441009219858 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Normal respiratory pressure at the end of normal inspiration is:
Options :
1. ✔ 0 cm H2O
2. ✖ -2 cmHg
3. ✖ 6 mmHg
4. ✖ 2 mmHg

Question Number : 33 Question Id : 441009798350 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is the most common sustained cardiac arrhythmia?
Options :
1. ✖ Ventricular fibrillation
2. ✔ Atrial fibrillation
3. ✖ Atrial flutter
4. ✖ Sinus tachycardia

Question Number : 34 Question Id : 4410091520260 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A collapsing pulse is characteristic of:
Options :
1. ✔ Aortic regurgitation
2. ✖ Mitral stenosis
3. ✖ Atrial fibrillation
4. ✖ Hypovolemia

Question Number : 35 Question Id : 4410091520307 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is considered an essential requirement for establishing a cardiac-specific intensive care unit to ensure continuous hemodynamic optimization in critically ill patients?
Options :
1. ✖ Availability of only defibrillators and oxygen cylinders
2. ✖ Periodic manual charting of pulse and blood pressure every 6 hours with ECG facilities
3. ✖ Use of standard ward beds equipped with portable stethoscopes
4. ✔ Advanced multi-parameter monitoring with invasive arterial pressure, CVP & continuous ECG facilities

Question Number : 36 Question Id : 441009219834 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which drug is used to reduce heart rate during stable atrial fibrillation?
Options :
1. ✔ Metoprolol
2. ✖ Atropine
3. ✖ Aminodarone
4. ✖ Adenosine

Question Number : 37 Question Id : 441009219878 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

Normal intra-alveolar pressure during inspiration is:

Options :

1. ✔ -1 mmHg
2. ✖ 1 mmHg
3. ✖ -2 mmHg
4. ✖ -7 mmHg

Question Number : 38 Question Id : 4410091515425 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

Which ECG characteristic is the hallmark of a Type 1 second-degree AV block?

Options :

1. ✖ The PR interval is constant, followed by a dropped QRS complex.
2. ✔ The PR interval progressively lengthens with each beat until a P wave is not followed by a QRS.
3. ✖ There is no P wave before the QRS complex and a constant R-R interval.
4. ✖ The PR interval is always prolonged, but the P wave is always conducted; Constant P-P interval.

Question Number : 39 Question Id : 441009823068 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following leads is a bipolar limb lead?
Options :
1. ✖ aVR
2. ✖ aVL
3. ✖ aVF
4. ✔ Lead II

Question Number : 40 Question Id : 441009824801 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Hypothermia is defined as a core body temperature below:
Options :
1. ✔ 35°C
2. ✖ 36°C
3. ✖ 37°C
4. ✖ 34°C

Question Number : 41 Question Id : 441009827061 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The ST segment duration is normally:
Options :
1. ✖ Absent
2. ✔ 0.08 to 0.12 seconds
3. ✖ 0.20 to 0.30 seconds
4. ✖ Longer than the PR interval

Question Number : 42 Question Id : 441009827300 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In which leads are T waves normally inverted in a healthy individual?
Options :
1. ✖ Leads II, aVF
2. ✔ Lead aVR
3. ✖ Leads V5 and V6
4. ✖ Leads I and V3

Question Number : 43 Question Id : 4410091515878 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary mechanism that causes ST-segment elevation on the ECG during an acute transmural MI?
Options :
1. ✖ Increased sympathetic nervous system tone and increased venous return through the SVC
2. ✖ Increased volume of blood in the ventricles and increased venous return through the IVC.
3. ✖ Delayed conduction through the AV node, Bundle of His, Bundle branches and Purkinje fibres.
4. ✔ An abnormal current of injury due to the failure of myocardial cells to fully repolarize.

Question Number : 44 Question Id : 4410091520336 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A standard 3-lead ECG uses leads:
Options :
1. ✔ I, II, III
2. ✖ aVR, aVL, aVF
3. ✖ V1, V2, V3
4. ✖ V4, V5, V6

Question Number : 45 Question Id : 441009224952 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which leads are used to determine the axis deviation in an ECG?
Options :
1. ✖ V1, V2
2. ✔ Lead I, aVF
3. ✖ V3, V4
4. ✖ V1, V3

Question Number : 46 Question Id : 441009225075 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What does the ST segment represent in an ECG?
Options :
1. ✖ Smaller part of atrial depolarisation
2. ✔ End of ventricular depolarisation and beginning of ventricular repolarisation
3. ✖ Beginning of ventricular depolarisation
4. ✖ End of ventricular depolarisation

Question Number : 47 Question Id : 441009226173 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Drug choice for Bradycardia is:
Options :
1. ✖ Anti emetics
2. ✔ Atropine
3. ✖ Adrenaline
4. ✖ Morphine

Question Number : 48 Question Id : 441009827087 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Compared to adults, the normal heart rate in infants is typically
Options :
1. ✖ Lower (40-60 bpm)
2. ✖ Similar (60-100 bpm)
3. ✔ Higher (100-160 bpm)
4. ✖ Variable with no pattern

Question Number : 49 Question Id : 4410091515857 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements is TRUE regarding the Bipolar ECG lead?
Options :
1. ✔ It measures the potential difference between two separate recording electrodes.
2. ✖ It measures voltage from the chest relative to the left leg.
3. ✖ It measures voltage from one negative electrode relative to the right leg ground.
4. ✖ It measures voltage from a single positive electrode relative to a central terminal.

Question Number : 50 Question Id : 4410091520343 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
T wave represents:
Options :
1. ✖ Atrial depolarization
2. ✖ Atrial repolarization
3. ✖ Ventricular depolarization
4. ✔ Ventricular repolarization

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Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist EEG EMG
Subject Name :	Medical Technologist EEG EMG
Creation Date :	2026-01-13 12:45:03
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist EEG EMG

Group Number :	1
Group Id :	4410091752999
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks :	100

Section A

Section Id :	4410091774494
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	30
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782938
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 1 Question Id : 4410091545787 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

Which of the following blood vessels does **NOT** enter the heart?

Options :

1. ✖ Superior vena cava
2. ✖ Inferior vena cava
3. ✖ Pulmonary veins
4. ✔ Pulmonary Artery

Question Number : 2 Question Id : 4410091545803 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Adrenal glands are located:
Options :
1. ✔ On top of each kidney in the upper abdomen
2. ✖ On top of the heart
3. ✖ Inside the brain
4. ✖ Near the gonads

Question Number : 3 Question Id : 4410091545827 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Low oxygen saturation in the blood is known as:
Options :
1. ✖ Hypoxia
2. ✔ Hypoxemia
3. ✖ Hypo-saturation
4. ✖ Hypo-hemoglobinemia

Question Number : 4 Question Id : 4410091545841 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Under normal conditions, which of the following blood component do **not** affect or minimally affect ESR?
Options :
1. ✖ Interaction between RBCs and plasma proteins
2. ✖ Concentration of the RBCs in blood
3. ✖ Physical appearance of RBCs
4. ✔ Platelets (thrombocytes)

Question Number : 5 Question Id : 4410091547862 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **FALSE** about Anaemias?
Options :
1. ✖ Haemolytic anaemia occurs when RBCs are destroyed faster than produced.
2. ✖ Vitamin deficiency anaemia occurs due to lack of Vitamin B12 or folate
3. ✖ Sickle cell anaemia is caused by abnormally shaped RBCs
4. ✔ Anaemia can never be inherited or genetic

Question Number : 6 Question Id : 4410091543786 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following are Anterior pituitary hormones?
Options :
1. ✖ Growth Hormone, Prolactin, Oxytocin, Thyroid Stimulating Hormone
2. ✔ Luteinizing Hormone, FSH, Prolactin, Melanocyte Stimulating Hormone
3. ✖ Oxytocin, FSH, ADH, Prolactin
4. ✖ ACTH, LH, FSH, Oxytocin

Question Number : 7 Question Id : 4410091545809 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The normal heart rate range in the resting state in an adult is:
Options :
1. ✔ 60-100 beats per minute
2. ✖ 80-120 beats per minute
3. ✖ 90-130 beats per minute
4. ✖ 100-150 beats per minute

Question Number : 8 Question Id : 4410091547881 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **FALSE** about the different types of biomedical wastes?
Options :
1. ✖ Anatomical waste comes from human tissues, organs and body parts.
2. ✖ Sharps is a waste from needles, syringes, scalpels and broken glass.
3. ✔ Soiled waste is the waste infected with soil.
4. ✖ Incineration ash results from the incineration of biomedical waste

Question Number : 9 Question Id : 4410091547889 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **NOT** a direct health impact of biomedical waste?
Options :
1. ✖ Infection from contaminated sharps (needles, syringes, scalpels etc.)
2. ✖ Injuries while handling contaminated sharps
3. ✖ Systemic and local infections from direct exposure to biomedical waste
4. ✔ Untreated liquid biomedical waste contaminating water bodies

Question Number : 10 Question Id : 4410091520442 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following vaccines is MOST essential for healthcare workers exposed to biomedical waste?
Options :
1. ✔ Hepatitis B
2. ✖ Rabies
3. ✖ Yellow fever
4. ✖ MMR

Question Number : 11 Question Id : 4410091547901 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **NOT** a key feature or objective of Universal Immunization Programme (UIP) in India?

Options :

1. ✖ To provide free vaccines against 12 preventable diseases
2. ✖ Organising campaigns against Polio, Measles etc.
3. ✖ Monitoring adverse events following immunization
4. ✔ Providing free milk to all children in India

Question Number : 12 Question Id : 4410091520447 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
"Honeymoon cystitis" in young, sexually active females is most commonly caused by:
Options :

1. ✔ Staphylococcus saprophyticus
2. ✖ Staphylococcus aureus
3. ✖ Proteus mirabilis
4. ✖ Candida albicans

Question Number : 13 Question Id : 4410091537496 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **NOT** true about sterilization and disinfection?
Options :

1. ✖ Sterilization kills all organisms including spores.
2. ✖ Sterilization uses more rigorous/harsh methods of microbial elimination than disinfection.
3. ✖ Surgical instruments must be sterilized before use.
4. ✔ Surgical instruments must be disinfected before use.

Question Number : 14 Question Id : 4410091537444 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
For a non-diabetic adult, post-prandial (PP) blood sugar/glucose should be:
Options :
1. ✔ Less than 140 mg/dL
2. ✖ Less than 140 ng/dL
3. ✖ Less than 140 pg/dL
4. ✖ Less than 140 µg/dL

Question Number : 15 Question Id : 4410091537474 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following are normal constituents of urine?
Options :
1. ✖ Water, Urea, Uric acid, Ketones
2. ✔ Water, Urea, Uric acid, Creatinine
3. ✖ Water, Urea, Uric acid, Glucose
4. ✖ Water, Urea, Uric acid, Bilirubin

Section B

Section Id :	4410091774495
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782939

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 4410091537520 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a function of the Parietal lobe of the brain?
Options :
1. ✖ Planning and decision making
2. ✖ Emotional regulation
3. ✔ Spatial awareness
4. ✖ Hormonal regulation

Question Number : 17 Question Id : 4410091543757 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Excitotoxicity is caused by prolonged and excessive excitation of what type of neurons?
Options :
1. ✔ Glutamatergic neurons
2. ✖ GABAergic neurons
3. ✖ Serotonergic neurons
4. ✖ Glycinergic neurons

Question Number : 18 Question Id : 4410091552942 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is FALSE about the axon hillock of a neuron?
Options :
1. ✖ It is the most excitable part of a neuron.
2. ✖ It contains a high density of voltage-gated sodium channels.
3. ✖ Axon hillock is the last site where synaptic inputs are summed up before an action potential is initiated.
4. ✔ Axon hillock is equivalent to synaptic cleft.

Question Number : 19 Question Id : 4410091549852 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is true about the basic EEG rhythm seen in normal adults?

Options :

1. ✖ Delta waves (0.5-4Hz) are seen during drowsiness and light sleep.
2. ✖ Theta waves (4-Hz) are seen in deep sleep.
3. ✔ Alpha waves (8-13 Hz) are seen in an awake, relaxed state and are predominant when the eyes are closed.
4. ✖ Alpha waves (8-13 Hz) are seen in an awake, relaxed state and are predominant when the eyes are open.

Question Number : 20 Question Id : 4410091549857 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following does NOT describe the electrical property of a muscle fibre?
Options :

1. ✖ Excitability
2. ✔ Contractibility
3. ✖ Conductivity
4. ✖ Action potential and Motor end plate potential

Question Number : 21 Question Id : 4410091549896 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a neurotransmitter?

Options :

1. ✖ Methionine
2. ✖ Aspartate
3. ✖ Leucine
4. ✔ Glycine

Question Number : 22 Question Id : 4410091555323 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **NOT** a primary muscle disease?

Options :

1. ✔ Arthritis
2. ✖ Myasthenia Gravis
3. ✖ Duchenne Muscular Dystrophy
4. ✖ Myositis

Question Number : 23 Question Id : 4410091555335 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is NOT a muscle injury?
Options :

1. ✖ Strain
2. ✔ Dislocation
3. ✖ Bruising (Contusions)
4. ✖ Laceration

Question Number : 24 Question Id : 4410091555360 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is an Axonopathy?

Options :

1. ✔ Charcot-Marie-Tooth disease
2. ✖ Alzheimer’s disease
3. ✖ Parkinson’s disease
4. ✖ Dementia

Question Number : 25 Question Id : 4410091555311 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why mature CNS neurons struggle to regenerate or divide by mitosis?

Options :

1. ✔ Because they lack centrioles
2. ✖ Because they lack nucleus
3. ✖ Because they lack cytoplasm
4. ✖ Because they lack ER

Question Number : 26 Question Id : 4410091555346 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Neuromuscular Junction (NMJ) disorders **cannot** arise due to:
Options :

1. ✔ Problems affecting sensory nerves or neurons
2. ✖ Autoimmune responses
3. ✖ Genetic mutations affecting genes related to NMJ components
4. ✖ Toxins like Botulinum

Question Number : 27 Question Id : 4410091533674 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is FALSE about EEG recordings in Creutzfeldt–Jakob disease (CJD)?
Options :

1. ✖ Diffuse slowing and FIRDA in early stages.
2. ✖ Periodic sharp wave complexes (PSWC) in middle and late stages appearing in about 2/3rd of cases.
3. ✖ Areactive coma or alpha coma (almost nil electrical activity) in pre-terminal EEG recordings.
4. ✔ EEG recordings can provide definite diagnosis of CJD.

Question Number : 28 Question Id : 4410091543816 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is abnormal in an infant EEG?
Options :
1. ✖ The posterior dominant background rhythm is slower in infants than in adults
2. ✖ The amplitude of background brain waves is generally higher in children
3. ✖ Delta and theta waves are seen in awake state and drowsiness
4. ✔ High levels of Beta activity in frontal areas in awake state

Question Number : 29 Question Id : 4410091533713 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which property of Blink artifacts help in their identification from normal EEG activity?
Options :
1. ✖ Their presence in Occipital leads (O1, O2)
2. ✔ Their presence in frontal and frontopolar leads (Fp1, Fp2) and high amplitude than normal awake state cortical activity
3. ✖ Their low amplitude than usual EEG waves in awake state.
4. ✖ Their higher frequency than normal awake EEG activity

Question Number : 30 Question Id : 4410091533686 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is NOT an activation method for inducing epilepsy?
Options :
1. ✖ Hyperventilation
2. ✖ Intermittent Photic Stimulation
3. ✖ Eye opening and Closing in photosensitive epilepsy cases
4. ✔ MRI scanning

Question Number : 31 Question Id : 4410091524141 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During Intraoperative Neuro-Monitoring (IONM) in neurosurgery, brain mapping is done:
Options :
1. ✔ To identify and map out functional areas of the brain before surgery
2. ✖ To measure brain volume
3. ✖ To determine Brain shape
4. ✖ To create a 3D model of the brain

Question Number : 32 Question Id : 4410091527276 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Quantitative EEG (QEEG) **does not** involve measurement/analysis of:
Options :
1. ✖ Power spectral density in different frequency bands at different electrodes
2. ✖ Asymmetry in brain wave activity between the two hemispheres
3. ✖ Coherence (tendency of EEG in two different channels to rise or fall in synchrony)
4. ✔ Phase reversals

Question Number : 33 Question Id : 4410091527314 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary purpose of Video EEG in suspected epilepsy cases?
Options :
1. ✔ It allows recording of patient behaviour which helps in differentiating seizures from other similar events.
2. ✖ It is used to record video of the patient for record purposes
3. ✖ It helps in knowing patient is sleeping or awake
4. ✖ It is used to keep an eye on the patient.

Question Number : 34 Question Id : 4410091527295 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
QEEG has helped in Epilepsy detection by:
Options :
1. ✔ Helping in delineating the epileptogenic zone, which is useful for surgical planning.
2. ✖ Removing the need for MRI or CT Scans
3. ✖ making long-term monitoring of EEG possible
4. ✖ Replacing the need for a neurologist in epilepsy detection

Question Number : 35 Question Id : 4410091529606 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **FALSE** about ambulatory EEG monitoring?
Options :
1. ✖ It allows EEG recording at patient's home
2. ✔ It involves tapering of epileptic medicines at home and record seizure event
3. ✖ It is typically done for 24 to 72 hours
4. ✖ It allows recording of seizure events while the patient performs normal daily activities.

Question Number : 36 Question Id : 4410091524093 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In Motor NCS, calculation of Conduction Velocity (CV) **does not** involve:
Options :
1. ✖ Calculation of distance between proximal and distal stimulation sites
2. ✖ Measurement of Proximal latency
3. ✖ Measurement of Distal latency
4. ✔ Calculation of CMAP Amplitude

Question Number : 37 Question Id : 4410091522314 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is FALSE about H waves?
Options :
1. ✖ It is commonly used to investigate S1 and C7 nerve root lesions
2. ✖ It is typically absent or significantly delayed in GBS
3. ✖ H-reflexes become less prominent and may even be bilaterally absent in older subjects
4. ✔ At low to submaximal stimulus, the H-wave disappears

Question Number : 38 Question Id : 4410091524050 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **NOT** the key diagnostic characteristic of F-wave in NCS?
Options :
1. ✖ Minimal latency
2. ✖ Amplitude
3. ✖ Persistence
4. ✔ Constant latency and Amplitude with each stimulus

Question Number : 39 Question Id : 4410091519698 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During embryonic development, muscles are derived from which germ layer?
Options :
1. ✖ Endoderm
2. ✔ Mesoderm
3. ✖ Ectoderm
4. ✖ Not derived from any Germ layer

Question Number : 40 Question Id : 4410091555523 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **True** about BAER test?
Options :
1. ✖ Patient or Subject has to be fully awake during the test
2. ✖ It is a subjective test
3. ✔ It is an objective test
4. ✖ It is an invasive test

Question Number : 41 Question Id : 4410091518540 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is NOT true about the BAER test?
Options :
1. ✖ BAERs can sometimes yield abnormal findings without any significant pathology.
2. ✖ Small or localized lesions may not produce detectable changes in the BAER waveform.
3. ✔ It has unlimited spatial resolution.
4. ✖ Different pathological conditions of the brainstem and auditory pathways can lead to similar BAER abnormalities.

Question Number : 42 Question Id : 4410091516136 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In a needle EMG test, in a normal muscle, an interference pattern is seen during:
Options :
1. ✖ Rest
2. ✖ Upon needle insertion
3. ✖ Minimal voluntary muscle contraction
4. ✔ Maximal forceful muscle contraction

Question Number : 43 Question Id : 4410091516045 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the correct order of steps followed during needle EMG exam?
Options :
1. ✔ Locate the muscle, clean the surface, insert the needle, record the resting and then contracting electrical activity
2. ✖ Locate the muscle, insert the needle, record the resting and contracting electrical activity
3. ✖ Insert the needle, clean the surface, locate the muscle, record the resting and contracting electrical activity
4. ✖ Locate the muscle, insert the needle, Record the resting and contracting electrical activity, clean the surface

Question Number : 44 Question Id : 4410091514280 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of following is not true regarding the proper handling of needle electrodes during an EMG exam?
Options :
1. ✖ The physician/technician should wear latex or rubber gloves
2. ✖ Disposable needle electrodes are preferable
3. ✖ Needles must be disposed of in proper containers
4. ✔ Needles can be inserted through an infected area

Question Number : 45 Question Id : 4410091509661 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In a needle EMG exam, the normal Motor Unit Action Potential (MUAP) amplitude in healthy adults typically ranges between:
Options :
1. ✔ 100 microvolt - 3 millivolts
2. ✖ 5 millivolts - 7.5 millivolts
3. ✖ 7.5 millivolts - 10 millivolts
4. ✖ 10 millivolts - 15 millivolts

Question Number : 46 Question Id : 4410091509815 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a biological artifact or noise encountered during needle EMG?
Options :
1. ✖ Amplifier Noise
2. ✖ Noise due to the movement of electrodes or leads
3. ✖ AC power line Interference
4. ✔ EMG signal from non-target muscles

Question Number : 47 Question Id : 4410091514533 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The amplifier used in a needle EMG examination should have all of the following EXCEPT:
Options :
1. ✔ Low input impedance
2. ✖ High input impedance
3. ✖ High Gain
4. ✖ High common mode rejection ratio (CMRR)

Question Number : 48 Question Id : 4410091514212 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The most effective approach for removing the ‘’cannula-potential artifact’’ in Motor Unit Potential (MUP) recordings is:
Options :
1. ✔ Repositioning the electrode closer to the active motor unit during recording
2. ✖ Post-Acquisition Signal filtering
3. ✖ Adaptive noise cancellation
4. ✖ Offline applying signal processing algorithms

Question Number : 49 Question Id : 4410091501518 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which one of the following activities is NOT a characteristic feature of REM sleep?
Options :
1. ✖ Rapid eye movements
2. ✔ Reduced brain activity than wakefulness (Slower, high-voltage EEG)
3. ✖ Increased heart rate
4. ✖ Temporary muscle paralysis

Question Number : 50 Question Id : 4410091509533 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
If a person is suspected to have Periodic Limb Movement Disorder (PLMD), which electrodes are specifically used during polysomnography to monitor this condition?
Options :
1. ✖ EEG electrodes on the scalp
2. ✖ ECG electrodes on the chest wall
3. ✖ EOG electrodes around the eyes
4. ✔ Surface EMG electrodes on both anterior tibialis muscles

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Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist OT
Subject Name :	Medical Technologist OT
Creation Date :	2026-01-13 12:38:21
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist OT

Group Number :	1
Group Id :	4410091759101
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks : 100

Section A

Section Id : 4410091780652
Section Number : 1
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 15
Number of Questions to be attempted : 15
Section Marks : 30
Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 4410091789109
Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 1 Question Id : 4410091516165 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

Which mechanism primarily leads to hemolytic anemia in hereditary spherocytosis?

Options :

1. ✖ Autoimmune destruction of RBCs leading to hemolytic anemia
2. ✖ Deficiency of G6PD resulting in increased RBS destruction
3. ✔ Defects in RBC membrane proteins leading to increased splenic sequestration
4. ✖ Bone marrow failure leading to reduced RBC production

Question Number : 2 Question Id : 4410091537219 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Read the following statements. Which of the following statements or combination of statements regarding the urinary bladder are correct?

1. Medial umbilical fold is a false ligament.
2. The main blood supply of the urinary bladder comes from the internal iliac artery.
3. The apex of the urinary bladder is connected to the umbilicus by the medial umbilical ligament.
4. The base is the lowest and most fixed part of the bladder.

Options :

1. ✔ Only 1 and 2
2. ✖ Only 2 and 3
3. ✖ 1, 2, and 3 only
4. ✖ All are correct

Question Number : 3 Question Id : 4410091537388 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The isthmus of the thyroid gland lies against which of the following vertebrae?
Options :

1. ✖ C6
2. ✔ C7
3. ✖ C4
4. ✖ T1

Question Number : 4 Question Id : 4410091537643 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements is incorrect regarding the differences between plasma and serum?
Options :
1. ✖ Plasma is the fluid which contains clotting factors, while serum is the liquid part of blood without the presence of clotting factors
2. ✔ Plasma contains less fibrinogen than serum
3. ✖ Plasma makes up 55% of the total blood volume, while serum constitutes a smaller volume compared to plasma
4. ✖ Frozen plasma can be stored for up to a year, while serum can be stored at 2-6 degrees celcius for several days

Question Number : 5 Question Id : 4410091537684 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is the primary function of platelets in the human body?
Options :
1. ✖ Transport oxygen to tissues
2. ✖ Produce antibodies against infections
3. ✔ Help form a temporary plug to stop bleeding
4. ✖ Destroy old red blood cells in the spleen

Question Number : 6 Question Id : 4410091516147 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary cause of hemolytic disease of the newborn (HDN) related to the Rh blood group system?
Options :
1. ✖ ABO incompatibility between mother and fetus
2. ✔ Maternal anti-RhIgG antibodies destroying fetal Rh-positive RBCs
3. ✖ Fetal production of anti-Rh antibodies
4. ✖ Maternal Rh negativity with fetal Rh negativity

Question Number : 7 Question Id : 4410091537606 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements about blood pressure is INCORRECT?
Options :
1. ✖ It is almost always measured in millimeters of mercury.
2. ✖ It is the force exerted by the blood against any unit area of the vessel wall.
3. ✔ One centimeter of water pressure equals 1.36 millimeters of mercury.
4. ✖ Small changes in vessel diameter markedly change its conductance.

Question Number : 8 Question Id : 4410091543950 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which container should be used for segregating used scalpel blades and suture needles after a procedure in the operation theatre?
Options :
1. ✖ Yellow bag
2. ✖ Red bag
3. ✔ White container
4. ✖ Black bin

Question Number : 9 Question Id : 4410091543975 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following waste items is correctly matched with its prescribed Biomedical Waste Management (BMWM) category under the latest guidelines?
Options :
1. ✔ Used microbiology culture plates- yellow Category
2. ✖ Vaccines vials containing live vaccine- Blue Category
3. ✖ Expired laboratory reagents containing chemicals- Red Category
4. ✖ Used vacutainers (plastic) without visible blood- White Category

Question Number : 10 Question Id : 4410091516190 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which color-coded bin is designated for disposing of anatomical and pathological waste according to biomedical waste management rules?
Options :
1. ✔ Yellow
2. ✖ Red
3. ✖ Blue
4. ✖ White (Translucent)

Question Number : 11 Question Id : 4410091521236 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which vaccine was the last to be introduced into India's Universal Immunisation Programme (UIP) under the Mission Indradhanush initiative?
Options :
1. ✖ Hib (Haemophilus influenzae type b) vaccine
2. ✖ Rotavirus vaccine
3. ✔ Pneumococcal conjugate vaccine (PCV)
4. ✖ HPV (Human Papillomavirus) vaccine

Question Number : 12 Question Id : 4410091545214 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which method of sterilization or disinfection is most appropriate for routine terminal cleaning of an operation theatre (OT) after completion of the day's surgical procedures?
Options :
1. ✖ Autoclaving the entire room using saturated steam under pressure
2. ✔ Surface disinfection with 1% sodium hypochlorite followed by fumigation/aerosolized hydrogen peroxide
3. ✖ Dry heat sterilization at 160°C for 2 hours
4. ✖ UV irradiation alone for 10 minutes after switching off the lights

Question Number : 13 Question Id : 4410091521251 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which microorganism is most commonly detected in urine cultures of patients with catheter-associated urinary tract infections (CAUTIs)?
Options :
1. ✔ Escherichia coli
2. ✖ Pseudomonas aeruginosa
3. ✖ Enterococcus faecalis
4. ✖ Candida albicans

Question Number : 14 Question Id : 4410091545938 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the normal plasma concentration of ionized (free) calcium in humans?
Options :
1. ✖ 2.5-3.0 mmol/L
2. ✔ 1.0-1.3 mmol/L
3. ✖ 0.3-0.5 mmol/L
4. ✖ 4.0-5.0 mmol/L

Question Number : 15 Question Id : 4410091521299 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In non-glomerular causes of hematuria, which of the following is most likely to be associated with painless, terminal hematuria?
Options :
1. ✖ Urinary tract infection (UTI)
2. ✖ Urolithiasis (kidney stones)
3. ✔ Bladder carcinoma
4. ✖ Acute pyelonephritis

Section B

Section Id :	4410091780653
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091789110
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 16 Question Id : 4410091546017 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which bone forms the lateral (outer) side of the forearm?
Options :
1. ✖ Ulna
2. ✔ Radius
3. ✖ Humerus
4. ✖ Clavicle

Question Number : 17 Question Id : 4410091521371 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the most common complication associated with peripheral intravenous (IV) catheter insertion?
Options :
1. ✔ Phlebitis
2. ✖ Air embolism
3. ✖ Thrombocytopenia
4. ✖ Extravasation of chemotherapy agents

Question Number : 18 Question Id : 4410091521384 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In trauma surgery, which principle is most crucial for ensuring optimal tissue healing and preventing infection?
Options :
1. ✔ Adequate hemostasis and asepsis
2. ✖ Use of broad-spectrum antibiotics only
3. ✖ Rapid wound closure regardless of tissue condition
4. ✖ Avoidance of any debridement to preserve tissue

Question Number : 19 Question Id : 4410091546508 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following best describes the role of bile salts in normal fat digestion in the small intestine?
Options :
1. ✖ They directly activate pancreatic lipase for triglyceride breakdown.
2. ✔ They emulsify large fat globules into smaller droplets, increasing surface area for enzyme action.
3. ✖ They convert triglycerides into glycerol even without pancreatic enzymes.
4. ✖ They neutralize gastric acid to optimize the pH for protein digestion.

Question Number : 20 Question Id : 4410091546557 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following disinfectants is most appropriate for high-level disinfection of endoscopes in the Operation Theatre, considering both effectiveness and material compatibility?
Options :
1. ✖ 70% Isopropyl alcohol
2. ✔ 2% Glutaraldehyde
3. ✖ 0.5% Chlorhexidine
4. ✖ 5% Phenol

Question Number : 21 Question Id : 4410091546592 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

In the postoperative period, a patient develops sudden high-grade fever, hypotension, and a diffuse erythematous rash 48 hours after surgery. Blood cultures grow *Staphylococcus aureus*. Which bacterial toxin is most likely responsible for this presentation?

Options :

1. ✖ Endotoxin (LPS)
2. ✖ Exfoliative toxin
3. ✔ Toxic shock syndrome toxin-1 (TSST-1)
4. ✖ Enterotoxin causing food poisoning

Question Number : 22 Question Id : 4410091546700 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

Which of the following indicators most reliably confirms that a load in the autoclave has been properly sterilized, demonstrating that microbial killing conditions were actually achieved inside the packs in the CSSD?

Options :

1. ✖ External chemical indicator tape changing color
2. ✖ Autoclave pressure reaching 15 psi during the cycle
3. ✔ Biological indicator containing *Geobacillus stearothermophilus* spores
4. ✖ Display panel showing completion of sterilization cycle

Question Number : 23 Question Id : 4410091521332 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

Among the following analgesics, which one acts primarily by central nervous system (CNS) inhibition of pain pathways and has minimal anti-inflammatory effects?

Options :

1. ✖ Ibuprofen
2. ✖ Aspirin
3. ✖ Indomethacin
4. ✔ Paracetamol (acetaminophen)

Question Number : 24 Question Id : 4410091521357 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is **NOT** an effective method for sterilizing prion-contaminated surgical instruments?
Options :
1. ✖ Autoclaving at 134°C for 18 minutes
2. ✖ Immersion in 1N sodium hydroxide followed by autoclaving
3. ✔ Standard ethylene oxide gas sterilization
4. ✖ Combined enzymatic cleaning and prolonged autoclaving

Question Number : 25 Question Id : 4410091521410 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary mechanism of killing of microbial organism during autoclave sterilization?
Options :
1. ✔ Protein denaturation by moist heat leading to coagulation
2. ✖ Oxidation of cellular components by dry heat
3. ✖ Disruption of microbial DNA by ionizing radiation
4. ✖ Chemical alkylation of proteins and DNA

Question Number : 26 Question Id : 4410091546630 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following urinary catheters is specifically designed with a curved tip to facilitate insertion in patients with urethral stricture or prostatic obstruction?
Options :
1. ✖ Foley Catheter
2. ✖ Robinson Catheter
3. ✔ Coude catheter
4. ✖ Malecot catheter

Question Number : 27 Question Id : 4410091546731 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

During spinal anesthesia administration, the anesthetist asks the OT technician to help identify the correct intervertebral space. Which landmark is MOST reliable for locating the L4–L5 interspace in an adult patient?

Options :

1. ✖ The lower border of the scapula
2. ✖ The posterior superior iliac spine (PSIS)
3. ✔ The line connecting the highest points of both iliac crests
4. ✖ The midline of the sacral hiatus

Question Number : 28 Question Id : 4410091546750 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

During the pre- and post-operative periods, continuous patient monitoring is essential to detect early physiological deterioration. Which of the following parameters is considered the earliest and most sensitive indicator of impending respiratory compromise in post-operative patients?

Options :

1. ✖ Blood pressure variability
2. ✖ Urine output
3. ✔ Respiratory rate
4. ✖ Skin temperature changes

Question Number : 29 Question Id : 4410091546772 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

Which of the following is the primary use of computers by an Operation Theater (OT) technician during routine surgical procedures in a modern OT?

Options :

1. ✖ Performing automated diagnosis of the patient’s condition
2. ✔ Recording patient data such as vitals, surgical checklists, and instrument tracking
3. ✖ Controlling the anesthesia ventilator directly
4. ✖ Sterilizing surgical instruments digitally

Question Number : 30 Question Id : 4410091521484 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which data processing method is most suitable for real-time monitoring of patient vital signs during surgery?
Options :
1. ✖ Batch processing
2. ✔ Online processing
3. ✖ Offline data analysis
4. ✖ Data warehousing

Question Number : 31 Question Id : 4410091546870 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following should the OT technician ensure first before starting an elective general surgery procedure?
Options :
1. ✖ Handing over instruments to the surgeon
2. ✔ Ensuring the patient file and consent are verified and present
3. ✖ Counting surgical sponges and gauze with the nurse
4. ✖ Disposing biomedical waste from the previous case

Question Number : 32 Question Id : 4410091546881 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
While preparing the operating theatre for an emergency exploratory laparotomy, which of the following should be prioritized first by the OT technician before the patient arrival?
Options :
1. ✖ Performing hand scrub and gowning
2. ✖ Counting and arranging surgical instruments
3. ✔ Checking functionality of anesthesia machine and suction system
4. ✖ Positioning the patient on the operating table

Question Number : 33 Question Id : 4410091546911 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A patient with a penetrating abdominal injury arrives in the emergency casualty OT and requires an urgent exploratory laparotomy. After assisting with patient identification and initial stabilization, which of the following should the OT technician do NEXT as part of emergency OT preparation?
Options :
1. ✖ Immediately hand over surgical instruments to the surgeon
2. ✔ Check availability and functionality of essential equipment for surgery
3. ✖ Send all instruments back for sterilization again
4. ✖ Prepare postoperative dressing materials first

Question Number : 34 Question Id : 4410091523803 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the correct order of priorities in the Advanced Trauma Life Support (ATLS) protocol during casualty surgery for a trauma patient?
Options :
1. ✖ Disability, Airway, Circulation, Breathing, Exposure
2. ✔ Airway, Breathing, Circulation, Disability, Exposure
3. ✖ Circulation, Airway, Breathing, Disability, Exposure
4. ✖ Airway, Disability, Circulation, Breathing, Exposure

Question Number : 35 Question Id : 4410091546939 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following checks must be ensured by the OT technician first before activating the diathermy machine during a surgical procedure?
Options :
1. ✖ The surgeon has sutures and dressings ready for procedure
2. ✖ The patient is positioned lying in prone position
3. ✔ The grounding plate is properly placed in contact with the skin
4. ✖ The suction machine is switched on to max power

Question Number : 36 Question Id : 4410091523806 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary advantage of LED surgical lights over traditional halogen OT lights?
Options :
1. ✖ Higher heat production improving visibility
2. ✔ Longer life span with lower energy consumption
3. ✖ More ultraviolet light emission for sterilization
4. ✖ Reduced shadow dilution during surgery

Question Number : 37 Question Id : 4410091523813 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary difference between the Mayo and Metzenbaum scissors used in general surgery?
Options :
1. ✔ Length and thickness of blades
2. ✖ Presence of serrations on the blade
3. ✖ Handle shape and material
4. ✖ Sterilization method compatibility

Question Number : 38 Question Id : 4410091523828 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In multi-instrument surgeries requiring different sets, how should trolleys be organized to optimize surgical efficiency?
Options :
1. ✖ All instruments for all procedures on a single trolley regardless of step sequence
2. ✔ Separate trolleys for each stage of the surgery arranged and labeled sequentially
3. ✖ Instruments placed randomly and switched out as needed by the scrub nurse
4. ✖ Use one trolley and sterilize instruments between steps in the same OT session

Question Number : 39 Question Id : 4410091546927 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

While performing routine preventive maintenance on an electrically operated OT table, the OT technician notices that the table's height adjustment is slow and moves with intermittent jerks. Which of the following should be the technician's FIRST action?

Options :

1. ✖ Immediately call biomedical engineering and discontinue maintenance
2. ✖ Lubricate the hydraulic system and continue using the table
3. ✔ Inspect and clean the electrical connections and check for loose wiring or dust accumulation
4. ✖ Replace the table's foot pedal without further assessment

Question Number : 40 Question Id : 4410091546982 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

While setting up a multiparameter patient monitor before surgery, the OT technician observes that the pulse oximeter waveform (plethysmograph) is present but the oxygen saturation (SpO_2) reading is fluctuating and inconsistent. Which troubleshooting action should be performed **first?**

Options :

1. ✖ Replace the monitor with a new machine
2. ✖ Increase the blood pressure cuff cycle frequency
3. ✔ Check proper placement, cleanliness, and circulation status of the patient's finger sensor
4. ✖ Adjust the ECG lead position to improve signal accuracy

Question Number : 41 Question Id : 4410091546999 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

During preparation for a general anesthesia case, the ventilator alarm displays **"High Airway Pressure"** immediately after connecting the patient to the circuit. The oxygen supply and power source are stable. What should the OT technician check **first** to identify the cause?

Options :

1. ✖ Replace the ventilator and switch to manual ventilation immediately
2. ✔ Check for kinks, blockages, or disconnections in the breathing circuit and endotracheal tube
3. ✖ Increase tidal volume to overcome the airway resistance
4. ✖ Turn off the alarm and continue monitoring manually

Question Number : 42 Question Id : 4410091523835 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During general anesthesia in OT, which parameter is primarily monitored by capnography?
Options :
1. ✖ Arterial oxygen saturation
2. ✖ Blood pressure waveform
3. ✔ End-tidal carbon dioxide ($ETCO_2$) concentration
4. ✖ Core body temperature

Question Number : 43 Question Id : 4410091523853 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which safety feature in modern infusion pumps primarily prevents air embolism during intravenous infusion in OT?
Options :
1. ✖ Pressure sensor
2. ✔ Air-in-line detector
3. ✖ Flow rate locking
4. ✖ Battery backup

Question Number : 44 Question Id : 4410091546949 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During a major abdominal emergency surgery, the suction machine suddenly shows reduced negative pressure despite being powered on. The collection jar is only half full, and the tubing appears intact. Which troubleshooting step should the OT technician perform **next** to restore proper function?
Options :
1. ✖ Replace the entire suction unit immediately without further assessment
2. ✔ Check and adjust the vacuum regulator and ensure the filter is not blocked
3. ✖ Disconnect the tubing and wash it with sterile water during the procedure
4. ✖ Increase wall suction force beyond the recommended level to compensate

Question Number : 45 Question Id : 4410091547015 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

Which item must be ensured as present and ready first while preparing the instrument trolley for a routine orthopedic procedure such as closed reduction and plaster application?

Options :

1. ✖ Bone saw
2. ✔ Plaster spreader and plaster knife
3. ✖ Skin stapler
4. ✖ Suction catheter

Question Number : 46 Question Id : 4410091547019 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

Which item must be checked and arranged first while preparing the instrument trolley for a Transurethral Resection of the Prostate (TURP), as it is essential for the procedure to begin?

Options :

1. ✖ Suction catheter and Yankauer suction tip
2. ✖ Foley catheter and urine collecting bag
3. ✔ Resectoscope sheath with working element and light cable
4. ✖ General surgical tray with artery forceps and scissors

Question Number : 47 Question Id : 4410091547029 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

While preparing the instrument trolley for a **coronary artery bypass grafting (CABG)** procedure, which of the following instrument types should the OT technician ensure is arranged and checked first because it is **critical for the initial surgical steps?**

Options :

1. ✔ Sternotomy set including sternal saw and rib spreaders
2. ✖ Vessel dilators and vascular clamps
3. ✖ Suction catheter and Yankauer tip
4. ✖ General surgical tray with artery forceps and scissors

Question Number : 48 Question Id : 4410091547040 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

During preparation of the instrument trolley for an emergency exploratory laparotomy, the surgeon indicates that the cause may involve bowel perforation. Which of the following instrument categories must be prioritized and checked first because it is essential for gaining abdominal access and early exposure?

Options :

1. ✖ Electrocautery pencil and suction tubing
2. ✔ Retractors, scalpel handles, and basic laparotomy set
3. ✖ Skin staplers and closure sutures
4. ✖ Vascular clamps and anastomosis instruments

Question Number : 49 Question Id : 4410091528741 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

Which instrument should be specifically checked and included in the trolley for pediatric tracheoesophageal fistula (TEF) repair, given the unique anatomical challenges?

Options :

1. ✖ Adult size endotracheal tube
2. ✔ Right-angled retractors
3. ✖ Large bowel clamps
4. ✖ Stone forceps

Question Number : 50 Question Id : 4410091528753 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

Which instrument is most essential for fine soft tissue dissection and shaping during microsurgical free flap procedures in plastic surgery?

Options :

1. ✔ Metzenbaum scissors
2. ✖ Mayo scissors
3. ✖ Langenbeck retractors
4. ✖ Allis forceps

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Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist Perfusionist
Subject Name :	Medical Technologist Perfusionist
Creation Date :	2026-01-13 12:42:27
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist Perfusionist

Group Number :	1
Group Id :	4410091759123
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks : 100

Section A

Section Id : 4410091780675
Section Number : 1
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 15
Number of Questions to be attempted : 15
Section Marks : 30
Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 4410091789132
Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 1 Question Id : 4410091512694 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following is a hypochromic microcytic anaemia?
Options :
1. ✔ Iron-deficiency anaemia
2. ✖ Folate deficiency anaemia
3. ✖ Aplastic anaemia
4. ✖ Pernicious anaemia

Question Number : 2 Question Id : 4410091530631 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The Endocrine part of the pancreas secretes hormones into :
Options :
1. ✖ Main pancreatic duct
2. ✔ Bloodstream
3. ✖ Accessory duct
4. ✖ Lymphatics

Question Number : 3 Question Id : 4410091530731 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Serum is obtained after :
Options :
1. ✖ Centrifuging anticoagulated blood
2. ✖ Centrifuging EDTA blood
3. ✔ Centrifuging clotted blood
4. ✖ Adding anticoagulant heparin

Question Number : 4 Question Id : 4410091530763 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The buffy coat in centrifuged blood contains?
Options :
1. ✔ WBCs+ Platelets
2. ✖ RBCs only
3. ✖ Serum
4. ✖ Plasma only

Question Number : 5 Question Id : 4410091530832 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the most common cause of microcytic hypochromic anemia?
Options :
1. ✔ Iron deficiency
2. ✖ B12 deficiency
3. ✖ Folate deficiency
4. ✖ Aplastic anemia

Question Number : 6 Question Id : 4410091512637 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In sickle cell disease the mutation affects which part of haemoglobin in the RBC?
Options :
1. ✖ α-globin chain leading to thalassaemia
2. ✔ β-globin chain substitution
3. ✖ Heme porphyrin ring only
4. ✖ 2,3-BPG binding site only

Question Number : 7 Question Id : 4410091530591 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Urethral diverticulum in females usually occurs due to infection of :-
Options :
1. ✔ Skene's glands
2. ✖ Bartholin's glands
3. ✖ Littre's glands
4. ✖ Cowper's glands

Question Number : 8 Question Id : 4410091515225 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following BEST describes the disposal pathway for waste in Red coloured non-chlorinated plastic bags?
Options :
1. ✖ Incineration or plasma pyrolysis only
2. ✖ Chemical disinfection followed by deep burial
3. ✖ Shredding followed by sanitary landfill
4. ✔ Autoclaving/microwaving followed by shredding and recycling

Question Number : 9 Question Id : 4410091515283 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Workers handling Red bag contaminated plastic waste are at increased risk of transmission during which activity?
Options :
1. ✔ Manipulating uncut IV tubing before disinfection
2. ✖ Storing disinfected waste in recycling room
3. ✖ Shredding after proper autoclaving
4. ✖ Packaging disinfected plastics for transport

Question Number : 10 Question Id : 4410091515146 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A patient presents with pseudomembranous pharyngitis. The infection risk to nearby healthcare workers is mainly due to:
Options :
1. ✖ Aerosolized particles that remain airborne for hours
2. ✔ Droplets that travel short distances during coughing
3. ✖ Fecal–oral transmission from contaminated hands
4. ✖ Vector-borne transmission via insects

Question Number : 11 Question Id : 4410091531946 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which is the most effective community-level prevention measure for Chikungunya ?
Options :
1. ✖ Oral prophylactic drugs
2. ✖ Insecticide- treated bed nets
3. ✖ Vaccination
4. ✔ Source reduction of mosquito breeding sites

Question Number : 12 Question Id : 4410091515415 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A high specific gravity on urine dipstick test MOST commonly indicates:
Options :
1. ✖ Diluted urine
2. ✖ Overhydration
3. ✔ Dehydration or concentrated urine
4. ✖ Contaminated urine

Question Number : 13 Question Id : 4410091515401 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which sterilization method is BEST for sterilizing HEPA filters used in airborne infection isolation rooms?
Options :
1. ✖ Moist heat autoclaving
2. ✔ Ethylene oxide gas
3. ✖ Filtration
4. ✖ Sunlight exposure

Question Number : 14 Question Id : 4410091532019 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The major regulator of potassium balance is :
Options :
1. ✖ PTH
2. ✖ ADH
3. ✔ Aldosterone
4. ✖ Calcitonin

Question Number : 15 Question Id : 4410091515464 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The presence of bile salts in urine is MOST strongly associated with which type of jaundice?
Options :
1. ✖ Hemolytic jaundice
2. ✖ Gilberts Syndrome
3. ✔ Obstructive (cholestatic) jaundice
4. ✖ Neonatal physiological jaundice

Section B

Section Id :	4410091780676
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091789133

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 4410091515579 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The portal triad in a hepatic lobule consists of:-
Options :
1. ✔ Hepatic artery, bile duct, and portal vein branch
2. ✖ Hepatic vein, lymphatic, and bile canaliculus
3. ✖ Portal vein, Central vein ,and hepatic vein
4. ✖ Central vein and hepatic artery

Question Number : 17 Question Id : 4410091515639 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The islets of Langerhans contain β-cells that secrete:
Options :
1. ✔ Insulin
2. ✖ Glucagon
3. ✖ Somatostatin
4. ✖ Adrenaline

Question Number : 18 Question Id : 4410091515805 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The Frank–Starling law of the heart states:
Options :
1. ✖ Increased afterload increases contraction
2. ✔ Increased venous return, increases stroke volume up to an optimal limit
3. ✖ Heart rate determines the cardiac work
4. ✖ Contractility is constant

Question Number : 19 Question Id : 4410091532075 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The ileocecal valve mainly prevents :
Options :
1. ✖ Rapid gastric emptying
2. ✖ Bacterial overgrowth
3. ✔ Colonic reflux into ileum
4. ✖ Protein malabsorption

Question Number : 20 Question Id : 4410091516085 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In CSSD, surgical steel instruments are showing signs of corrosion after sterilization. Which change in the sterilization protocol is MOST appropriate?
Options :
1. ✖ Replace autoclaving with gamma radiation
2. ✔ Switch from moist heat to dry heat sterilization
3. ✖ Increase autoclave temperature
4. ✖ Wash instruments with saline before sterilization

Question Number : 21 Question Id : 4410091535949 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Flagella present all over the bacterial cell is called :
Options :
1. ✖ Monotrichous
2. ✖ Lophotrichous
3. ✖ Amphirichous
4. ✔ Peritrichous

Question Number : 22 Question Id : 4410091516115 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Protein binding of a drug MOST significantly affects which pharmacokinetic parameter during CPB?
Options :
1. ✖ Clearance
2. ✔ Volume of distribution (Vd)
3. ✖ Bioavailability
4. ✖ Hepatic metabolism

Question Number : 23 Question Id : 4410091516134 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During CPB, the plasma concentration of fentanyl often decreases because of:
Options :
1. ✖ Increased hepatic clearance
2. ✔ Adsorption to the CPB circuit
3. ✖ Increased renal elimination
4. ✖ Reduced volume of distribution

Question Number : 24 Question Id : 4410091516146 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following principles best describes the relationship between the amount of gas dissolved in a liquid and the pressure of that gas above the liquid , at constant temperature?
Options :
1. ✖ Boyle's Law
2. ✖ Charle's Law
3. ✖ Dalton's Law of Partial Pressures
4. ✔ Henry's Law

Question Number : 25 Question Id : 4410091536033 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Mechanical equivalent of heat was was determined by:
Options :
1. ✖ Newton
2. ✔ Joule
3. ✖ Ohm
4. ✖ Pascal

Question Number : 26 Question Id : 4410091516195 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Biological signals often require time-localized frequency analysis because:
Options :
1. ✔ Their frequency content changes rapidly during physiological events
2. ✖ They remain constant over time
3. ✖ They are purely noise
4. ✖ They have no power spectrum

Question Number : 27 Question Id : 4410091539291 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The synchronization ("SYNC") mode of a defibrillator is primarily used for treatment of :
Options :
1. ✖ Ventricular fibrillation
2. ✖ Pulseless ventricular tachycardia
3. ✖ Ventricular tachycardia with a pulse
4. ✔ Atrial flutter or supraventricular tachycardia

Question Number : 28 Question Id : 4410091539310 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The commonly used design principle in oxygenator heat exchangers is :
Options :
1. ✖ Double tube laminar flow
2. ✔ Countercurrent flow
3. ✖ Oscillatory flow
4. ✖ Turbulent multi-vent flow

Question Number : 29 Question Id : 4410091516218 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The FIRST clinically successful heart–lung machine and pump oxygenator was developed by:
Options :
1. ✔ John Gibbon
2. ✖ DeWall & Lillehei
3. ✖ Kolff
4. ✖ Bjork

Question Number : 30 Question Id : 4410091516230 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A major limitation of designing an artificial lung with very large surface area is:
Options :
1. ✖ Reduced gas exchange
2. ✔ Increased priming volume and hemodilution
3. ✖ Reduced diffusion capability
4. ✖ Inadequate CO_2 clearance

Question Number : 31 Question Id : 4410091516272 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Centrifugal pumps provide several advantages over roller pumps, including:
Options :
1. ✖ Increased risk of air embolism
2. ✖ More predictable flow despite pressure changes
3. ✔ Lower risk of excessive negative pressure and cavitation
4. ✖ Higher hemolysis due to shear forces

Question Number : 32 Question Id : 4410091516332 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which temperature is the best indicator of cerebral temperature during CPB?
Options :
1. ✖ Rectal
2. ✖ Tympanic
3. ✔ Nasopharyngeal
4. ✖ Esophageal (distal)

Question Number : 33 Question Id : 4410091542213 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A major limitation of Cell Saver use is:
Options :
1. ✖ It increases blood pressure
2. ✔ It removes clotting factors and platelets
3. ✖ It increases plasma volume
4. ✖ It increases ACT

Question Number : 34 Question Id : 4410091539360 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In which type of pumps do low - level alarms in a venous reservoir become most critical?
Options :
1. ✔ Roller pumps
2. ✖ Centrifugal pumps
3. ✖ Bladder type venous reservoirs
4. ✖ Gas blender systems

Question Number : 35 Question Id : 4410091516560 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which step must be verified FIRST during assembly of the CPB circuit?
Options :
1. ✖ Check heater–cooler temperature
2. ✔ Confirm integrity of tubing connections
3. ✖ Fill the reservoir with prime
4. ✖ Connect venous line to patient cannula

Question Number : 36 Question Id : 4410091542300 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During full CPB support , the heart becomes empty and bloodless because:
Options :
1. ✔ Pumps sucks blood out
2. ✖ Venous return exceeds arterial outflow
3. ✖ Systemic venous pressure is reduced
4. ✖ Lungs inflate blood into heart

Question Number : 37 Question Id : 4410091516584 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which MAP range is generally required to ensure adequate organ perfusion during standard CPB?
Options :
1. ✖ 20–30 mmHg
2. ✖ 35–45 mmHg
3. ✔ 50–70 mmHg
4. ✖ >90 mmHg

Question Number : 38 Question Id : 4410091542323 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Alpha - stat management during hypothermic CPB is characterized by which of the following?
Options :
1. ✖ Adding CO_2 to maintain PH 7.40 at patient temperature
2. ✔ No CO_2 addition , PH measured at 37 degree c
3. ✖ PH corrected for patient temperature
4. ✖ Increasing $PaCO_2$ to 60mmHg

Question Number : 39 Question Id : 4410091519345 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which parameter is MOST useful to assess venous drainage adequacy during CPB?
Options :
1. ✖ MAP - Mean Arterial Pressure
2. ✔ Venous line chatter
3. ✖ Pump flow rate
4. ✖ Reservoir level

Question Number : 40 Question Id : 4410091519319 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which statement regarding goals of mechanical support during resuscitation is most accurate?
Options :
1. ✖ Primary objective is to increase LV preload
2. ✔ Maintain coronary perfusion and systemic perfusion
3. ✖ Rapidly induce hypertension
4. ✖ Completely replace cardiac function permanently

Question Number : 41 Question Id : 4410091519358 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A patient undergoing CPB separation after mitral valve replacement has hypotension and elevated LA pressure. What is the MOST likely cause?
Options :
1. ✖ Hypovolemia
2. ✔ Prosthetic valve obstruction
3. ✖ RV failure
4. ✖ Low SVR

Question Number : 42 Question Id : 4410091544759 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The phenomenon of "Harlequin syndrome" is most commonly seen in :
Options :
1. ✖ VV ECMO
2. ✖ VVA ECMO
3. ✔ Peripheral femoral VA ECMO
4. ✖ Central VA ECMO

Question Number : 43 Question Id : 4410091544782 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During CPB with an Cardioplegic arrested heart, an unexpected rise in LV pressure is most commonly caused by :
Options :
1. ✖ Increased arterial pump flow
2. ✔ Inadequate LV venting leading to ventricular distension
3. ✖ Excessive venous drainage
4. ✖ Low systemic vascular resistance

Question Number : 44 Question Id : 4410091544810 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which psychological stressor Most affects perfusionist during cardiopulmonary Bypass ?
Options :
1. ✖ Long working hours
2. ✔ Fear of equipment failure or patient safety responsiblity
3. ✖ Conflict with surgical team
4. ✖ Poor financial compensation

Question Number : 45 Question Id : 4410091519945 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which organization provides the globally recognized professional standards for perfusionists?
Options :
1. ✖ WHO
2. ✖ FDA
3. ✖ IMA
4. ✔ AmSECT

Question Number : 46 Question Id : 4410091519488 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In the immediate post-operative period after cardiac surgery, the MOST common cause of low cardiac output syndrome is:
Options :
1. ✖ Hyperkalemia
2. ✔ Hypovolemia
3. ✖ High systemic vascular resistance
4. ✖ Hypoglycemia

Question Number : 47 Question Id : 4410091519501 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which piece of equipment is MOST important for clearing airway obstruction during resuscitation?
Options :
1. ✖ Infusion pump
2. ✔ Suction apparatus
3. ✖ Nebulizer
4. ✖ Pulse oximeter

Question Number : 48 Question Id : 4410091544818 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which vasopressor (first line) is used in postcardiac vasoplegia syndrome?
Options :
1. ✖ Dopamine
2. ✖ Phenylephrine
3. ✔ Norepinephrine
4. ✖ Vasopressin

Question Number : 49 Question Id : 4410091544824 Question Type : MCQ Option Shuffling : Yes Correct Marks : 2 Wrong Marks : 0.5

After cardiac surgery, the most common cause of sudden Pulseless Electrical Activity (PEA) arrest is:

Options :

1. ✖ Acute MI
2. ✖ Massive PE
3. ✖ Tension pneumothorax
4. ✔ Cardiac tamponade

Question Number : 50 Question Id : 4410091547059 Question Type : MCQ Option Shuffling : Yes Correct Marks : 2 Wrong Marks : 0.5

What is the most likely reason for a sudden rise in ACT level during the protamine administration?

Options :

1. ✖ Not enough heparin reversal
2. ✔ Excess protamine inhibits thrombin
3. ✖ Platelet activation
4. ✖ AT-III activity increases

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Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist RD
Subject Name :	Medical Technologist RD
Creation Date :	2026-01-13 12:43:20
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist RD

Group Number :	1
Group Id :	4410091759137
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks : 100

Section A

Section Id :	4410091780690
Section Number :	1
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	15
Number of Questions to be attempted :	15
Section Marks :	30
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091789147
Question Shuffling Allowed :	Yes
Is Section Default? :	No

Question Number : 1 Question Id : 4410091515277 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5

Which of the following statements correctly describes the relationship between the chambers of the heart and the great vessels?

Options :

1. ✔ The left atrium receives oxygenated blood from the pulmonary veins.
2. ✖ The right ventricle pumps oxygenated blood into the aorta.
3. ✖ The left ventricle pumps deoxygenated blood into the pulmonary trunk.
4. ✖ The right atrium receives oxygenated blood from the superior vena cava.

Question Number : 2 Question Id : 4410091515298 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following best describes the anatomical location of the thyroid gland?
Options :
1. ✖ Posterior to the trachea, opposite the fifth to seventh thoracic vertebrae
2. ✖ Anterior to the trachea, opposite the fifth to seventh cervical vertebrae
3. ✔ Anterior to the trachea, opposite the second to fourth tracheal rings
4. ✖ Lateral to the esophagus, opposite the first thoracic vertebra

Question Number : 3 Question Id : 4410091517390 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements about platelets is correct?
Options :
1. ✖ Platelets are true cells with a nucleus.
2. ✔ Platelets are derived from megakaryocytes and play a role in blood clotting.
3. ✖ Platelets are produced in the liver and stored in the spleen.
4. ✖ Platelets mainly function in oxygen transport.

Question Number : 4 Question Id : 4410091524394 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Where exactly do the adrenal glands lie?
Options :
1. ✖ In the kidneys, at the hilum
2. ✔ Superior pole of each kidney
3. ✖ Within the pelvis
4. ✖ Behind the liver

Question Number : 5 Question Id : 4410091524405 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A typical resting heart rate for a healthy adult is:
Options :
1. ✖ 20–40 bpm
2. ✖ 40–60 bpm
3. ✔ 60–100 bpm
4. ✖ 100–140 bpm

Question Number : 6 Question Id : 4410091525228 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
When the body experiences hypoxia, which response occurs to help restore normal oxygen levels?
Options :
1. ✖ The liver releases bilirubin to stimulate RBC formation
2. ✔ The kidneys secrete erythropoietin to increase RBC production
3. ✖ The spleen enlarges to store additional red blood cells
4. ✖ The bone marrow decreases erythrocyte synthesis to conserve oxygen

Question Number : 7 Question Id : 4410091525241 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following correctly explains how RBC morphology affects ESR?
Options :
1. ✖ Poikilocytosis and anisocytosis increase ESR because they promote rouleaux formation
2. ✔ The biconcave shape of normal RBCs favours sedimentation, but anisocytosis and poikilocytosis decrease ESR due to poor rouleaux formation
3. ✖ ESR is unaffected by RBC shape and depends only on haemoglobin levels
4. ✖ Abnormally shaped RBCs always increase ESR by increasing stacking ability

Question Number : 8 Question Id : 4410091517398 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to the Biomedical Waste Management Rules, 2016 (amended 2018, India), which of the following is the correct categorization of biomedical waste?
Options :
1. ✖ Biomedical waste is divided into 4 categories based on source of generation.
2. ✖ Biomedical waste is divided into 10 categories based on physical characteristics.
3. ✔ Biomedical waste is divided into 4 categories based on treatment and disposal options.
4. ✖ Biomedical waste is divided into 8 categories based on infectious potential only.

Question Number : 9 Question Id : 4410091524589 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Improper management of biomedical waste will expose to more risks of:
Options :
1. ✖ Asthma
2. ✔ HIV/HBV transmission
3. ✖ Myopia
4. ✖ Arthritis

Question Number : 10 Question Id : 4410091525284 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
From the following, which area of the hospital generates the maximum risk waste that must be strictly segregated?
Options :
1. ✖ Physiotherapy unit
2. ✖ Hospital kitchen
3. ✔ Microbiology laboratory
4. ✖ Out patient department

Question Number : 11 Question Id : 4410091524717 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
National AIDS Control Programme (NACP) primarily focuses on:
Options :
1. ✖ Eradicating TB
2. ✔ Prevention of HIV transmission
3. ✖ Malaria control
4. ✖ Polio vaccination

Question Number : 12 Question Id : 4410091524727 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following tests is most commonly used to detect urinary nitrites?
Options :
1. ✖ Benedict's test
2. ✔ Dipstick test
3. ✖ Barfoed's test
4. ✖ Titration method

Question Number : 13 Question Id : 4410091517420 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In semi-quantitative urine analysis, R.E and C stand for:
Options :
1. ✖ Renal Epithelium and Crystals
2. ✖ Red Elements and Casts
3. ✔ Red Cells and Casts
4. ✖ Renal Elements and Crystals

Question Number : 14 Question Id : 4410091525211 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which nitrogenous waste is most abundant in normal urine?
Options :
1. ✖ Uric acid
2. ✖ Creatinine
3. ✖ Ammonia
4. ✔ Urea

Question Number : 15 Question Id : 4410091517424 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to WHO criteria, what is the normal 2-hour postprandial blood glucose level in a non-diabetic individual?
Options :
1. ✖ Less than 100 mg/dL
2. ✖ Less than 120 mg/dL
3. ✔ Less than 140 mg/dL
4. ✖ Less than 200 mg/dL

Section B

Section Id :	4410091780691
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091789148

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 4410091517438 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
How many individual vertebrae are present in the human vertebral column at birth?
Options :
1. ✖ 26
2. ✖ 30
3. ✔ 33
4. ✖ 35

Question Number : 17 Question Id : 4410091517458 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following structures belong to the central nervous system (CNS)?
Options :
1. ✔ Brain and spinal cord
2. ✖ Cranial and spinal nerves
3. ✖ Autonomic and somatic nerves
4. ✖ Sensory and motor neurons

Question Number : 18 Question Id : 4410091524326 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Abdominal aorta bifurcates at the level of:
Options :
1. ✖ L1
2. ✖ T12
3. ✔ L4
4. ✖ S1

Question Number : 19 Question Id : 4410091525324 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The pituitary gland is situated in the:
Options :
1. ✖ Ethmoid sinus
2. ✔ Sella turcica
3. ✖ Mastoid process
4. ✖ Inferior nasal cavity

Question Number : 20 Question Id : 4410091517444 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements correctly describes the nasal cavity?
Options :
1. ✖ It is a single cavity divided by the hard palate.
2. ✔ It is divided into two parts by the nasal septum and lined with ciliated mucosa.
3. ✖ It opens directly into the oral cavity without any separation.
4. ✖ It is lined only with stratified squamous epithelium.

Question Number : 21 Question Id : 4410091528560 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which type of X-ray is produced when a high-speed electron suddenly slows down on striking the anode target?
Options :
1. ✖ Characteristic X-rays
2. ✔ Bremsstrahlung X-rays
3. ✖ Scatter radiation
4. ✖ Gamma rays

Question Number : 22 Question Id : 4410091517467 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the type of electric supply required for operating an X-ray tube?
Options :
1. ✖ Direct current (DC)
2. ✖ Alternating current (AC)
3. ✔ Pulsating DC after rectification
4. ✖ High-frequency AC

Question Number : 23 Question Id : 4410091517477 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements correctly describes a portable X-ray machine?
Options :
1. ✖ It is a fixed unit used only in radiology departments.
2. ✔ It is a small, lightweight unit designed for bedside or field use.
3. ✖ It requires a separate high-voltage generator room.
4. ✖ It cannot be operated with battery power

Question Number : 24 Question Id : 4410091517485 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following quantities measures the biological effect of ionizing radiation on human tissue?
Options :
1. ✖ Exposure (C/kg)
2. ✖ Absorbed dose (Gray)
3. ✔ Equivalent dose (Sievert)
4. ✖ Radioactivity (Becquerel)

Question Number : 25 Question Id : 4410091525464 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Collimators reduce:
Options :
1. ✖ Film speed
2. ✔ Scattered radiation
3. ✖ Tube current
4. ✖ Magnification

Question Number : 26 Question Id : 4410091517473 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
According to the law of transformers, the ratio of voltages across primary and secondary coils is directly proportional to:
Options :
1. ✖ The current in the coils
2. ✔ The turns ratio of the coils
3. ✖ The resistance of the coils
4. ✖ The magnetic flux in the core

Question Number : 27 Question Id : 4410091517512 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main purpose of performing a Micturating Cystourethrogram (MCU) examination?
Options :
1. ✖ To assess renal function
2. ✖ To evaluate the gallbladder and bile ducts
3. ✔ To detect vesicoureteral reflux and study the urethra during voiding
4. ✖ To visualize the adrenal glands

Question Number : 28 Question Id : 4410091517506 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following statements about the diaphragm is correct?
Options :
1. ✖ It is a voluntary muscle that separates the thoracic and pelvic cavities.
2. ✔ It is an involuntary muscle that separates the thoracic and abdominal cavities.
3. ✖ It assists only in expiration.
4. ✖ It is not involved in respiration.

Question Number : 29 Question Id : 4410091517522 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main purpose of performing a splenoportal venography examination?
Options :
1. ✖ To assess arterial supply of the spleen
2. ✔ To visualize the venous drainage from spleen to the portal vein
3. ✖ To detect splenic cysts or abscesses
4. ✖ To evaluate lymphatic drainage of the spleen

Question Number : 30 Question Id : 4410091525514 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Iodine is used in contrast media mainly because of the following reasons
Options :
1. ✖ Low atomic number
2. ✖ High solubility
3. ✔ High atomic number
4. ✖ Radioactivity

Question Number : 31 Question Id : 4410091526449 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which part of the aorta is best visualized using a left anterior oblique (LAO) chest radiographic projection?
Options :
1. ✖ Ascending aorta
2. ✔ Aortic arch
3. ✖ Left branch of the bronchial tree
4. ✖ Abdominal aorta

Question Number : 32 Question Id : 4410091527469 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
High kV technique results in:
Options :
1. ✖ High image contrast
2. ✔ Low image contrast
3. ✖ Increased magnification
4. ✖ Increased noise only

Question Number : 33 Question Id : 4410091517553 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following patient preparation instructions is correct for a Barium Meal (Upper GI) examination?
Options :
1. ✖ The patient should eat a light breakfast before the procedure.
2. ✖ The patient should be on a full liquid diet on the day of the test.
3. ✔ The patient should be fasting for 6–8 hours prior to the examination.
4. ✖ The patient should take a laxative just before the study.

Question Number : 34 Question Id : 4410091517573 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following ultrasound display modes provides a two-dimensional, real-time cross-sectional image of tissues and organs?
Options :
1. ✖ A-mode
2. ✔ B-mode
3. ✖ M-mode
4. ✖ Doppler mode

Question Number : 35 Question Id : 4410091525741 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In a radiographic film projector, which component is mainly responsible for minimizing geometric unsharpness and ensuring that the projected image of the X-ray film remains sharply focused across the entire screen?
Options :
1. ✖ Cooling fan
2. ✔ Condenser lens assembly
3. ✖ Projection screen surface
4. ✖ Heat-absorbing filter

Question Number : 36 Question Id : 4410091525738 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Increasing the Source-to-Image Distance (SID) will have what effect on the radiographic image?
Options :
1. ✖ Increase magnification
2. ✔ Decrease magnification
3. ✖ Increase density
4. ✖ Increase scatter radiation

Question Number : 37 Question Id : 4410091528798 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
When presenting a radiograph for clinical interpretation, which viewing condition is required for accurate assessment of image detail?
Options :
1. ✖ Ambient room lighting
2. ✖ Sunlight through a window
3. ✔ Uniform high-intensity illuminator
4. ✖ Using computer screen only

Question Number : 38 Question Id : 4410091528809 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why are notches or semicircular incisions commonly made in a cellulose acetate dental mount using a special dental mount cutter?
Options :
1. ✖ To enhance the flexibility of the mount
2. ✖ To allow the mount to transmit more light
3. ✔ To securely hold the dental film in place
4. ✖ To make identification of right and left easier

Question Number : 39 Question Id : 4410091528813 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the final step recommended after cleaning and drying the radiographic screen and cassette?
Options :
1. ✖ Spray with a disinfectant
2. ✔ Record the date of cleaning on the back of the cassette
3. ✖ Close and store the cassette immediately
4. ✖ Insert a new film for immediate use

Question Number : 40 Question Id : 4410091525729 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

During manual film processing, if the clearing time of an X-ray film in fixer is measured as 45 seconds, what should be the recommended total fixation time to ensure complete removal of unexposed silver halide?

Options :

1. ✖ 45 seconds
2. ✔ 90 seconds
3. ✖ 2 minutes
4. ✖ 4 minutes

Question Number : 41 Question Id : 4410091525736 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

In Operation Theatre radiographic processing, which of the following chemicals is most commonly used for rapid manual processing to obtain quick images during surgical procedures?

Options :

1. ✖ Sodium thiosulphate
2. ✖ Phenidone–hydroquinone developer
3. ✔ Glutaraldehyde-based rapid developer
4. ✖ Potassium bromide restrainer

Question Number : 42 Question Id : 4410091528844 Question Type : MCQ Option Shuffling : Yes

Correct Marks : 2 Wrong Marks : 0.5

What is the recommended oxygen flow rate range for proper use of a nasal cannula for longer-term oxygen administration?

Options :

1. ✖ 10–15 liters per minute
2. ✔ 1–6 liters per minute
3. ✖ 6–10 liters per minute
4. ✖ 15–20 liters per minute

Question Number : 43 Question Id : 4410091517546 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main objective of the reception area in a radiology department?
Options :
1. ✖ To store radiographic equipment
2. ✔ To provide a waiting and registration area ensuring patient comfort and proper communication
3. ✖ To conduct X-ray examinations
4. ✖ To serve as a darkroom for film processing

Question Number : 44 Question Id : 4410091528881 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
When applying a new dressing after wound cleaning, which best practice ensures sterility and reduces infection risk?
Options :
1. ✖ Using clean (not sterile) gauze and gloves
2. ✔ Using sterile supplies and the open gloving method to maintain a sterile field
3. ✖ Applying tape before cleaning the wound
4. ✖ Allowing the patient to assist with the dressing change

Question Number : 45 Question Id : 4410091528895 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following best distinguishes instrument preparation for medical versus surgical asepsis?
Options :
1. ✔ Medical asepsis instruments may be clean or disinfected, while surgical asepsis instruments must be completely sterile.
2. ✖ Both require only the instrument’s surfaces to be visibly clean.
3. ✖ Surgical asepsis instruments are disinfected but not sterilized.
4. ✖ There is no difference in instrument care between the two.

Question Number : 46 Question Id : 4410091517537 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary purpose of applying a splint in first aid management of fractures or dislocations?
Options :
1. ✖ To completely heal the fracture without medical treatment
2. ✔ To immobilize the injured part and prevent further injury or pain
3. ✖ To increase circulation around the fracture site
4. ✖ To allow free movement of the affected limb

Question Number : 47 Question Id : 4410091517555 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main function of the cooling system in a CT scanner?
Options :
1. ✖ To maintain constant patient temperature during scanning
2. ✖ To reduce noise generated by the rotating gantry
3. ✔ To dissipate heat produced by the X-ray tube during operation
4. ✖ To cool the detector electronics for better image contrast

Question Number : 48 Question Id : 4410091528913 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In the Straton x-ray tube used in CT, the anode is in direct contact with circulating oil, resulting in a cooling rate of about 5.0 MHU/min. What is the resulting approximate anode heat-storage capacity for this tube?

Options :
1. ✖ 8 MHU
2. ✖ 4 MHU
3. ✖ 1 MHU
4. ✔ 0 MHU

Question Number : 49 Question Id : 4410091528929 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why is gadolinium (Gd^{3+}) considered an optimal agent for T1 enhancement in MRI?
Options :
1. ✖ It has a high electron density, enabling direct radiofrequency absorption.
2. ✔ Its seven unpaired electrons create a large magnetic moment, accelerating longitudinal relaxation (T1) of nearby water protons.
3. ✖ It reduces bulk water movement within tissues.
4. ✖ It provides negative contrast by shortening T2 relaxation.

Question Number : 50 Question Id : 4410091528940 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why is the typical frequency range for continuous wave Doppler probes (3–8 MHz) particularly suitable for assessing physiologic blood flow in the human body?
Options :
1. ✔ These frequencies maximize tissue penetration while keeping Doppler shifts within the human audible range.
2. ✖ Lower frequencies are required to detect arterial stenosis.
3. ✖ Only high-frequency ultrasound (>12 MHz) can produce Doppler shifts.
4. ✖ Frequencies above 10 MHz can avoid tissue attenuation completely.

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Notations :

1.Options shown in green color and with ✔ icon are correct.

2.Options shown in red color and with ✖ icon are incorrect.

Question Paper Name :	Medical Technologist RT
Subject Name :	Medical Technologist RT
Creation Date :	2026-01-13 12:44:04
Duration :	60
Number of Questions :	50
Total Marks :	100
Display Marks:	Yes
Change Font Color :	No
Change Background Color :	No
Change Theme :	No
Help Button :	No
Show Reports :	No
Show Progress Bar :	No

Medical Technologist RT

Group Number :	1
Group Id :	4410091752980
Group Maximum Duration :	0
Group Minimum Duration :	60
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0

Group Marks : 100

Section A

Section Id : 4410091774474
Section Number : 1
Section type : Online
Mandatory or Optional : Mandatory
Number of Questions : 15
Number of Questions to be attempted : 15
Section Marks : 30
Maximum Instruction Time : 0
Sub-Section Number : 1
Sub-Section Id : 4410091782918
Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 1 Question Id : 4410091505692 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which blood group is preferred for immediate transfusion of packed red blood cells to minimize the risk of hemolytic reactions?
Options :
1. ✖ A Rh-negative
2. ✔ O Rh-negative
3. ✖ AB Rh-positive
4. ✖ B Rh-negative

Question Number : 2 Question Id : 4410091505699 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which condition MOST commonly causes microcytic hypochromic anemia?
Options :
1. ✖ Aplastic anemia
2. ✖ Sickle cell disease
3. ✔ Iron deficiency
4. ✖ B12 deficiency

Question Number : 3 Question Id : 4410091527813 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following structures collects urine directly from the renal papillae?
Options :
1. ✖ Afferent arteriole
2. ✖ Proximal convoluted tubule
3. ✔ Minor calyx
4. ✖ Loop of Henle

Question Number : 4 Question Id : 4410091527825 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which part of the male urethra passes through the prostate gland?
Options :
1. ✖ Penile urethra
2. ✖ Membranous urethra
3. ✔ Prostatic urethra
4. ✖ Terminal urethra

Question Number : 5 Question Id : 4410091527835 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The head of the pancreas is functionally and anatomically associated with which structure?
Options :
1. ✔ Duodenum
2. ✖ Ileum
3. ✖ Cecum
4. ✖ Rectum

Question Number : 6 Question Id : 4410091505623 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The thyroid cartilage lies in relation to the thyroid gland at:
Options :
1. ✔ A position entirely above both lobes
2. ✖ The level of the isthmus
3. ✖ A level inferior to the isthmus
4. ✖ The lower poles of the lobes

Question Number : 7 Question Id : 4410091527804 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The definition of heart rate is directly associated with which cardiac phase described in the cardiac cycle?
Options :
1. ✖ Duration of ventricular ejection only
2. ✔ Repetitive sequence of atrial and ventricular systole and diastole
3. ✖ Pressure variations between pulmonary and aortic valves
4. ✖ Closure frequency of the atrioventricular valves

Question Number : 8 Question Id : 4410091509008 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Hematocrit is defined as which of the following measurements in a blood sample?
Options :
1. ✖ The concentration of circulating plasma proteins
2. ✖ The proportion of leukocytes relative to total blood volume
3. ✔ The percentage of the blood volume occupied by red blood cells
4. ✖ The ratio of plasma water to dissolved electrolytes

Question Number : 9 Question Id : 4410091527887 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Radioactive waste in hospitals most commonly originates from:
Options :
1. ✖ Cleaning and housekeeping materials
2. ✔ Diagnostic and therapeutic nuclear medicine procedures
3. ✖ General ward activities
4. ✖ Laundry operations

Question Number : 10 Question Id : 4410091527877 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Sharps waste such as used needles with syringes (after needle separation) must be collected in which container?
Options :
1. ✖ Blue cardboard box
2. ✖ Yellow non-chlorinated bag
3. ✖ Red plastic bag
4. ✔ White puncture-proof container

Question Number : 11 Question Id : 4410091532276 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Under Comprehensive Primary Health Care service delivery, the Health and Wellness Centre is expected to undertake which filariasis-related service?
Options :
1. ✖ Hydrocele surgery at primary care level
2. ✔ Diagnosis and follow-up care for filariasis cases
3. ✖ Entomological surveillance of mosquito vectors
4. ✖ Conducting microfilaria night blood surveys

Question Number : 12 Question Id : 4410091505768 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What does the presence of leukocyte esterase in urine indicate?
Options :
1. ✖ Viral infection
2. ✖ Increased glucose concentration
3. ✔ Pyuria due to WBC enzymes
4. ✖ Presence of epithelial cells

Question Number : 13 Question Id : 4410091532283 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the primary purpose of wet mopping or wet vacuuming only within a 3-4 feet radius around the operating site between cases?
Options :
1. ✖ To limit unnecessary movement of sterile air currents
2. ✔ To prevent tracking contamination toward sterile areas
3. ✖ To prevent water-induced electrical hazards near equipment
4. ✖ To minimize disruption of laminar airflow systems

Question Number : 14 Question Id : 4410091532278 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Post-prandial (reactive) hypoglycemia is primarily associated with which of the following?
Options :
1. ✖ Insulin under-secretion
2. ✔ Excessive insulin release after a meal
3. ✖ Impaired gluconeogenesis
4. ✖ Decreased NADH production

Question Number : 15 Question Id : 4410091505783 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which condition commonly leads to hypokalemia?
Options :
1. ✖ Acute renal failure
2. ✔ Diarrhea and vomiting
3. ✖ Blood transfusion
4. ✖ Hypoaldosteronism

Section B

Section Id :	4410091774475
Section Number :	2
Section type :	Online
Mandatory or Optional :	Mandatory
Number of Questions :	35
Number of Questions to be attempted :	35
Section Marks :	70
Maximum Instruction Time :	0
Sub-Section Number :	1
Sub-Section Id :	4410091782919

Question Shuffling Allowed : Yes
Is Section Default? : No

Question Number : 16 Question Id : 4410091509040 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The logarithm of which number always equals zero when using base 10?
Options :
1. ✖ 0
2. ✔ 1
3. ✖ 10
4. ✖ 100

Question Number : 17 Question Id : 4410091509151 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A conductor has a resistance of 20Ω. If a current of 3A flows through it, what is the potential difference (voltage) across the conductor according to Ohm's law?
Options :
1. ✔ 60 V
2. ✖ 23 V
3. ✖ 17 V
4. ✖ 6.7 V

Question Number : 18 Question Id : 4410091525675 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why is a variable magnetic field essential in cyclic accelerators?
Options :
1. ✖ To supply electric power to the accelerating cavity
2. ✔ To force the particle onto a closed orbit for repeated acceleration cycles
3. ✖ To reduce the bremsstrahlung produced during acceleration
4. ✖ To neutralize space-charge effects in the beam

Question Number : 19 Question Id : 4410091523375 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The decay constant (λ) represents:
Options :
1. ✖ Activity per unit mass
2. ✔ Probability of decay per unit time
3. ✖ Energy absorbed per unit dose
4. ✖ Fraction of exposure lost in air

Question Number : 20 Question Id : 4410091509184 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the half-life of a radionuclide, and which formula correctly shows the relationship between half-life and the decay constant (λ)?
Options :
1. ✖ Half-life is the time required for a radionuclide to completely decay, and the formula is $T_{1/2}=\lambda\times2$
2. ✔ Half-life is the time required for a radionuclide to reduce to 50% of its original activity, and the formula is $T_{1/2}=\ln2/\lambda$
3. ✖ Half-life is the time required for a radionuclide to increase activity, and the formula is $T_{1/2}=1/2\lambda$
4. ✖ Half-life is the time required for a radionuclide to double activity, and the formula is $T_{1/2}=\ln(\lambda)$

Question Number : 21 Question Id : 4410091509221 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What does Compton scattering produce after the interaction occurs?
Options :
1. ✖ Only a scattered photon with no electron movement
2. ✔ An ion pair consisting of a positive atom and a recoil electron
3. ✖ Two new photons and no electron ejection
4. ✖ A pair of electrons without any scattered photon

Question Number : 22 Question Id : 4410091523378 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Compton scattering is a major interaction of X-rays and gamma rays within matter. It occurs when incident photons transfer part of their energy to which type of atomic particles?
Options :
1. ✖ Inner-shell electrons
2. ✖ Nucleus
3. ✔ Free or loosely bound electrons
4. ✖ Positrons

Question Number : 23 Question Id : 4410091509248 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
When X-rays pass through tissue, absorption occurs in certain interactions. Which of the following statements is correct?
Options :
1. ✖ Compton scattering is an example of a full absorption process.
2. ✖ Pair production is a partial absorption process.
3. ✔ The photoelectric effect is an absorption process, where the X-ray disappears completely.
4. ✖ Photodisintegration does not involve absorption of X-rays.

Question Number : 24 Question Id : 4410091523385 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The rectus abdominis muscle is anatomically important in radiotherapy planning for abdominal wall lesions because it:
Options :
1. ✖ Lies posterior to all abdominal organs
2. ✔ Forms part of the anterior abdominal wall where tumors such as fibromatosis may arise
3. ✖ Is the main muscle involved in respiration
4. ✖ Is absent below the umbilicus

Question Number : 25 Question Id : 4410091509321 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following options correctly lists the meningeal layers surrounding the spinal cord from outermost to innermost, including the space between the layers?
Options :
1. ✖ Pia mater - Arachnoid mater - Dura mater; subarachnoid space contains cerebrospinal fluid
2. ✔ Dura mater - Arachnoid mater - Pia mater; subarachnoid space contains cerebrospinal fluid
3. ✖ Arachnoid mater - Dura mater - Pia mater; epidural space contains cerebrospinal fluid
4. ✖ Dura mater - Pia mater - Arachnoid mater; subdural space contains cerebrospinal fluid

Question Number : 26 Question Id : 4410091512007 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the ability of a malignant tumor to spread from its primary site to distant organs through lymphatic or blood circulation called?
Options :
1. ✔ Metastasis
2. ✖ Differentiation
3. ✖ Hyperplasia
4. ✖ Angiogenesis

Question Number : 27 Question Id : 4410091512038 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following options correctly represents the five R's of radiotherapy that form the biological basis of dose fractionation?
Options :
1. ✔ Repair, Redistribution, Repopulation, Reoxygenation, Radiosensitivity
2. ✖ Repair, Respiration, Reabsorption, Recharging, Radiosensitivity
3. ✖ Redistribution, Respiration, Repair, Reduction, Repopulation
4. ✖ Radiosensitivity, Respiration, Regeneration, Redistribution, Reabsorption

Question Number : 28 Question Id : 4410091525682 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why does reoxygenation improve the therapeutic outcome of fractionated radiotherapy in tumour cells?
Options :
1. ✖ It increases the number of mitotically active hypoxic tumour cells
2. ✔ It allows previously radioresistant cells to become more radiosensitive between fractions
3. ✖ It enhances the absorption of high LET radiation
4. ✖ It reduces the tumour’s alpha/beta ratio

Question Number : 29 Question Id : 4410091523431 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Effective dose equivalent combines:
Options :
1. ✖ Energy and exposure
2. ✔ Absorbed dose and biological weighting
3. ✖ Mass and kerma
4. ✖ Fluence and attenuation

Question Number : 30 Question Id : 4410091512101 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which statement correctly describes how Effective Dose (EfD) is determined?
Options :
1. ✖ EfD is calculated by multiplying absorbed dose (D) by tissue weighting factor (WT) only, and is measured in gray (Gy).
2. ✖ EfD is the absorbed dose (D) multiplied only by the radiation weighting factor (WR), and expressed in coulombs/kg.
3. ✔ EfD is obtained by multiplying absorbed dose (D) by radiation weighting factor (WR) and tissue weighting factor (WT), and is expressed in sieverts (Sv).
4. ✖ EfD is calculated by subtracting WT from WR after multiplying by dose, and is measured in roentgens (R).

Question Number : 31 Question Id : 4410091523436 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which of the following materials is most commonly used in a Thermoluminescent Dosimeter (TLD)?
Options :
1. ✔ Lithium Fluoride
2. ✖ Aluminum
3. ✖ Copper
4. ✖ Lead glass

Question Number : 32 Question Id : 4410091512305 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main principle by which a Thermoluminescent Dosimeter (TLD) measures radiation exposure?
Options :
1. ✖ By darkening film when exposed to radiation, similar to traditional film badges
2. ✔ By trapping energized electrons in lithium fluoride (LiF) crystals and releasing light when heated
3. ✖ By absorbing radiation and generating an electric current proportional to the dose
4. ✖ By detecting scattered X-ray photons using an ionization chamber

Question Number : 33 Question Id : 4410091512363 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which statement BEST characterizes the requirements for low-energy brachytherapy sources?
Options :
1. ✖ They require no shielding due to minimal penetration
2. ✖ They can be stored in any locked room without a shielded container
3. ✔ They require less shielding than high-energy sources but still need secure storage
4. ✖ They must be stored exclusively in lead safes like high-energy radium sources

Question Number : 34 Question Id : 4410091512399 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which IGRT platform provides megavoltage computed tomography (MVCT) using a miniature Linac waveguide mounted on a CT-type gantry?
Options :
1. ✖ Varian Trilogy
2. ✖ Elekta Synergy
3. ✔ TomoTherapy system
4. ✖ CyberKnife system

Question Number : 35 Question Id : 4410091525688 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In dynamic (sliding-window) MLC IMRT, the delivered intensity at a point is primarily determined by:
Options :
1. ✖ The difference between monitor units planned and delivered
2. ✔ The dwell time between opposing leaves at that point
3. ✖ The scattering contribution from leaf sides
4. ✖ The transmission factor of jaws only

Question Number : 36 Question Id : 4410091517552 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
The Batho correction method is applied for:
Options :
1. ✖ Beam flatness
2. ✔ Tissue heterogeneities
3. ✖ Detector calibration
4. ✖ Field junction matching

Question Number : 37 Question Id : 4410091512439 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why is the isodose surface shifted toward the surface after passing through an air cavity?
Options :
1. ✖ Because the cavity increases attenuation causing deeper dose deposition
2. ✖ Because the cavity reduces photon fluence leading to deeper isodose appearance
3. ✔ Because the cavity reduces scatter and buildup, causing the expected isodose to occur more proximally
4. ✖ Because the cavity increases tissue density beyond the cavity

Question Number : 38 Question Id : 4410091517578 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
In Brachytherapy, Pretreatment safety checks in High Dose Rate ensure:
Options :
1. ✖ Patient positioning only
2. ✔ Source returns to the safe position
3. ✖ Beam energy measurement
4. ✖ Film processor function

Question Number : 39 Question Id : 4410091512461 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
During verification of congruence between the light field and the radiation field, which tolerance criterion defines the acceptable agreement?
Options :
1. ✖ Light field and radiation field edges must match within 1 mm
2. ✔ Light field and radiation field edges must match within 2 mm
3. ✖ Light field must be symmetric within 3 mm of the collimator axis
4. ✖ Radiation field must be centered within 0.5 mm at all gantry angles

Question Number : 40 Question Id : 4410091517583 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
What is the main purpose of performing a Source inventory in a radiation facility?
Options :
1. ✖ Measure beam quality
2. ✔ Track sealed sources
3. ✖ Verify MLC calibration
4. ✖ Check kVp settings

Question Number : 41 Question Id : 4410091512508 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which statement best describes the role of national dosimetry and calibration services under the IAEA Basic Safety Standards (BSS)?
Options :
1. ✖ They replace the responsibility of licensees for radiation protection
2. ✖ They assist governments in performing regulatory inspections
3. ✔ They provide essential services without removing responsibility from licensees
4. ✖ They authorize sources for medical use

Question Number : 42 Question Id : 4410091523442 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A dicentric chromosome is formed due to:
Options :
1. ✔ Breakage and exchange
2. ✖ Deletion of telomere
3. ✖ DNA polymerase error
4. ✖ Transcription defect

Question Number : 43 Question Id : 4410091512529 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why are chromosomal aberrations more likely to occur when cells are exposed to densely ionizing radiation?
Options :
1. ✖ They produce higher energy photons that penetrate deeper
2. ✖ They create widely spaced ionization tracks that reduce DNA interaction
3. ✔ They produce closely spaced ionization events, increasing the chance of double-strand DNA breaks
4. ✖ They interact only with cell membranes rather than DNA

Question Number : 44 Question Id : 4410091517594 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Histological assessment aids radiotherapy mainly by:
Options :
1. ✖ Calculating dose per fraction
2. ✔ Identifying tumour aggressiveness and proliferation rate
3. ✖ Determining total machine workload
4. ✖ Choosing immobilization devices

Question Number : 45 Question Id : 4410091512572 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which method most effectively reduces biopsy sampling errors, comparable to PET/CT's improvement in biopsy accuracy?
Options :
1. ✖ Gross pathology examination alone
2. ✔ Digital whole-slide imaging with AI-assisted region-of-interest detection
3. ✖ Simple cytological smears
4. ✖ Autofluorescence microscopy

Question Number : 46 Question Id : 4410091512585 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
A 6-MV single photon beam is being considered for treating a patient with a 3-cm-deep skin recurrence. Under which scenario is a single field most justified as radical treatment rather than palliative?
Options :
1. ✖ The target lies <10 cm deep and no critical structures exist beneath it
2. ✔ The target lies <5 cm deep and dose uniformity can be achieved within ±5%
3. ✖ The target is superficial but adjacent organs require strict sparing
4. ✖ The tumour is deep seated and requires dose concentration at midline

Question Number : 47 Question Id : 4410091512600 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
When planning radiation therapy for pelvic malignancies, what is the primary advantage of using filtered back-projection CT images instead of simple back-projection?
Options :
1. ✖ It increases voxel attenuation values for bone structures
2. ✔ It eliminates streak artifacts, yielding more accurate delineation of pelvic organs and target volumes
3. ✖ It allows higher pitch scanning for faster patient throughput
4. ✖ It automatically generates electron density maps without user intervention

Question Number : 48 Question Id : 4410091512614 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Which characteristic of radionuclide uptake is essential for therapeutic success in the therapy of skeletal metastases?
Options :
1. ✖ Preferential binding of the isotope to tumor RNA
2. ✖ Selective accumulation in the bone marrow cavity
3. ✔ Targeting of hydroxyapatite at sites of increased osteoblastic activity
4. ✖ Uniform distribution throughout the entire skeleton

Question Number : 49 Question Id : 4410091512621 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
Why is Phosphorus-32 still used in hematologic malignancies such as polycythemia vera despite limited dosimetry publications?
Options :
1. ✖ It produces uniform marrow irradiation enabling predictable biological response.
2. ✔ Effective dose prescriptions are historically validated and associated with minimal complications.
3. ✖ It has a long half-life allowing long-term control of hematologic malignancies.
4. ✖ Its colloidal form is rapidly cleared, reducing marrow exposure.

Question Number : 50 Question Id : 4410091512633 Question Type : MCQ Option Shuffling : Yes
Correct Marks : 2 Wrong Marks : 0.5
If a patient inside the treatment room reports acute distress through the intercom, what is the FIRST coordinated team response according to safe communication protocols?
Options :
1. ✖ Immediately activate the emergency-off switch inside the room
2. ✔ Interrupt irradiation from the control panel and initiate visual verification
3. ✖ Wait for radiation monitor confirmation before interruption
4. ✖ Ask the patient to remain still until the physicist arrives