# SCTIMST 2010

**1. Percentage of oxygen delivered by use of a non-rebreathing mask with a flow rate of 10 litres /minute is:**
a. 20 – 35
b. 35 – 50
c. 50 – 60
d. 90 – 95
**Answer:** d
**Rationale:** (External) A non-rebreathing mask with a reservoir bag and a flow rate of 10-15 L/min is designed to deliver the highest possible oxygen concentration (90% to 100%) short of intubation.
**2. Simple or typical febrile seizures occur in:**
a. Infants below 3 months of age
b. 3 months – 5 years
c. 3 years – 8 years
d. Preadolescents
**Answer:** b
**Rationale:** (External) Typical febrile seizures are common in children between the ages of 6 months and 5 years, though some sources extend the range from 3 months to 5 or 6 years.

**3. The dilution of adrenaline used in neonatal resuscitation is:**
a. 1:10
b. 1:100
c. 1:1000
d. 1:10000
**Answer:** d
**Rationale:** (External) In neonatal resuscitation, a highly diluted concentration of 1:10,000 is used to ensure safe dosing for the infant's small body mass.

**4. Injection sodium bicarbonate should not be mixed with:**
a. Normal saline
b. 5% dextrose
c. Calcium gluconate
d. Ringer lactate
**Answer:** c
**Rationale:** (External) Mixing sodium bicarbonate with calcium gluconate causes the formation of calcium carbonate, a precipitate that can clog IV lines or cause harm if injected
.
**5. Weight and Length of a normal full term baby, with birth weight of 3 kg at one year of age, are expected to be:**
a. 7 kg and 70 cm
b. 9 kg and 75 cm
c. 12 kg and 80 cm
d. 12 kg and 85 cm
**Answer:** b

**Rationale:** (External) Generally, a baby's weight triples by one year (3kg x 3 = 9kg) and their birth length (averaging 50cm) increases by about 50% (75cm).

**6. Using a placebo for pain control in a certain case without the patient's consent is:**
a. justified and ethical
b. justified but unethical
l c. deceptive but ethical
d. deceptive and unethical
**Answer:** d
**Rationale:** (External) Administering a placebo without informed consent involves deception and violates the patient's right to autonomy and truthful disclosure about their treatment.

**7. Which of the following can be used for applying moist heat?**
a. Sitz bath
b. Aqua pad
c. Hot water bag
d. Commercial hot pack
**Answer:** a
**Rationale:** (External) A Sitz bath involves immersing the pelvic area in warm water, which is a direct application of moist heat.

**8. Which action is most effective in preventing wound infections?**
a. Using sterile dressings
b. Suggesting dietary supplements
c. Applying antibiotic ointment
d. Observing careful hand hygiene
**Answer:** d
**Rationale:** (External) Hand hygiene is universally recognized as the single most important practice for preventing the transmission of microorganisms and subsequent infections.

**9. Before administering enteric coated drug through a naso-gastric tube, the nurse should first ensure:**
a. Crushing of the tablet
b. Flushing the tube with warm water
c. Checking for proper placement of the tube
d. Taking the patient's vital signs
**Answer:** c
**Rationale:** (External) Verifying the correct placement of the nasogastric tube is the critical first safety step before introducing any medication or fluid into the stomach to avoid aspiration. (Note: Enteric-coated tablets should generally not be crushed).

**10. Maslow's hierarchy of basic human needs is useful when planning and implementing nursing care, as it provides a structure for:**
a. Making accurate nursing diagnosis
b. Establishing priorities of care
c. Communicating concerns more concisely d. Integrating science into nursing care

**Answer:** b
**Rationale:** (External) Maslow's hierarchy helps nurses prioritize care by addressing life-threatening physiological needs (like breathing) before higher-level needs (like self-esteem).

**11. Which nursing organization was the first international organization of women nurses?**
a. The International Council of Nurses (ICN)
b. The American Nurses Association (ANA)
c. The National League for Nursing (NLN)
d. The National Student Nurses' Association (NSNA)
**Answer:** a
**Rationale:** (External) Founded in 1899, the ICN was the first international organization for health care professionals, specifically for nurses
.
**12. Total Parenteral Nutrition (TPN) is administered through a central vein because of:**
a. Rapid rate of infusion
b. High volume of infusion
c. High osmolarity of solution
d. Easy access
**Answer:** c
**Rationale:** (External) TPN solutions are highly concentrated (hypertonic). Administering them into a large central vein allows for rapid dilution in high-volume blood flow, preventing vein irritation or thrombosis.

**13. Gas gangrene is caused by:**
a. Clostridium tetani
b. Clostridium perfringes
c. Clostridium difficile
d. Anaerobic streptococci
**Answer:** b
**Rationale:** (External) *Clostridium perfringens* is the most common anaerobic bacterium responsible for gas gangrene (clostridial myonecrosis).

**14. Most important step in avoiding wrong site surgery is:**
a. Having a check list procedure before surgery
b. Avoiding patients with the same name on the list
c. Avoiding patients with same conditions in the list
d. Having a short operation list
**Answer:** a
**Rationale:** (External) Surgical checklists (like the WHO Surgical Safety Checklist) are standardized protocols designed to ensure the correct patient, site, and procedure are identified before the operation begins
.
**15. Transmission of HIV to health care workers during surgery can be prevented by:**
a. Routine screening of all patients
b. Using "universal precautions"
c. Avoiding surgery on HIV patients

d. Antiretroviral prophylaxis for the health care workers
**Answer:** b **Rationale:** (External) Universal precautions (now part of Standard Precautions) assume all blood and body fluids are potentially infectious, providing the most reliable protection for staff.

**16. Accurate estimation of large burn areas is done by:**
a. "Rule of nine"
b. Patient hand approximated to 1% total burn surface area
c. Lund & Browder chart
d. Calculation of Body Mass Index
**Answer:** c
**Rationale:** (External) While the "Rule of Nines" is faster for initial assessment, the Lund & Browder chart is more accurate because it accounts for changes in body surface area proportions as a person ages.

**17. Most common topical treatment used for burn wound, which is effective against both pseudomonas and MRSA is:**
a. Silver sulphadiazine
b. 0.5% Silver nitrate
c. Mafenide acetate
d. Soframycin
**Answer:** a
**Rationale:** (External) Silver sulphadiazine (Silvadene) is a broad-spectrum antimicrobial cream widely used for its efficacy against common burn pathogens, including *Pseudomonas* and *Staphylococcus aureus*.

**18. Best and easy way to monitor resuscitation in a burn patient is:**
a. Monitoring pulse rate
b. Monitoring blood pressure
c. Monitoring urine output
d. Monitoring haematocrit
**Answer:** c **Rationale:** (External) Urine output is a reliable, non-invasive indicator of organ perfusion and fluid volume status, serving as the gold standard for monitoring fluid resuscitation in burn patients
.
**19. Lucid interval is seen in:**
a. Intra cerebral haemorrhage
b. Extradural haemorrhage
c. Acute subdural haemorrhage
d. Chronic subdural haemorrhage
**Answer:** b
**Rationale:** (External) A lucid interval—a temporary period of consciousness following a head injury before neurological decline—is a classic sign of an epidural (extradural) hematoma
.
**20. All the following suture materials are absorbable, EXCEPT:**
a. Polyglycolic acid (Vicryl)

b. Chromic catgut
c. Polypropylene (Prolene)
d. Polydioxanone (PDS)
**Answer:** c **Rationale:** (External) Polypropylene (Prolene) is a synthetic, non-absorbable monofilament suture often used for permanent tissue support or skin closure.

**21. A patient with Diabetes Insipidus characteristically complains of:**
a. Fatigue
b. Hunger
c. Thirst
d. Weight loss
**Answer:** c **Rationale:** (External) Diabetes Insipidus is characterized by an inability to concentrate urine, leading to excessive fluid loss and intense thirst (polydipsia) to compensate.

**22. The fluid preferred for initial resuscitation of a patient with hemorrhagic shock is:**
a. Ringer's lactate
b. Whole blood
c. 5% dextrose
d. Fresh frozen plasma
**Answer:** a **Rationale:** (External) Isotonic crystalloids like Ringer's lactate are preferred for initial volume expansion because they stay in the intravascular space better than hypotonic solutions and are readily available.

**23. Nyctalopia and Bitot Spot are due to deficiency of:**
a. Vitamin A
b. Vitamin C
c. Vitamin D
d. Vitamin E
**Answer:** a **Rationale:** (External) Vitamin A is essential for eye health; its deficiency leads to night blindness (nyctalopia) and abnormal dryness/keratinization of the conjunctiva (Bitot's spots).

**24. One pint of 10% dextrose yields, how much of calories?**
a. 100
b. 200
c. 300
d. 400
**Answer:** b
**Rationale:** (External) One pint is approximately 500 mL. In 10% dextrose, there are 10g of sugar per 100mL, so 50g in 500mL. Since carbohydrates provide 4 calories per gram, 50g x 4 = 200 calories.

**25. The thick collection of nerve fibers that connects the two hemispheres of the brain is called:**
a. Corpus callosum
b. Hypothalamus

c. Pons
d. Brain stem
**Answer:** a **Rationale:** (External) The corpus callosum is the primary white matter structure that enables communication between the left and right cerebral hemispheres.

**26. Guedal airway is a:**
a. Oropharyngeal airway
b. Nasopharyngeal airway
c. Laryngeal airway
d. Tracheal airway
**Answer:** a
**Rationale:** (External) A Guedel airway is a specific type of curved plastic tube (oropharyngeal airway) used to maintain an open airway by keeping the tongue from obstructing the epiglottis.
**27. All of the following are complications of immobility, EXCEPT:**
a. Pneumonia
b. Deep venous thrombosis
c. Pressure sores
d. Hepatic failure
**Answer:** d **Rationale:** (External) Immobility increases the risk of lung stasis (pneumonia), blood stasis (DVT), and skin breakdown (pressure sores), but it does not directly cause liver failure.

**28. Which of the following represents lead III of electrocardiography?**
a. Right leg to right arm
b. Left leg to left arm
c. Right leg to left arm
d. Left leg to right arm
**Answer:** b
**Rationale:** (External) In Einthoven's triangle, Lead III measures the potential difference between the left arm and the left leg (often referred to as the left leg being the positive electrode relative to the left arm).

**29. In Trendelenburg position:**
a. The foot end of the bed is elevated
b. The head end of the bed is elevated
c. Patient is put in decubitus position
d. Patient is put in prone position
**Answer:** a **Rationale:** (External) In the Trendelenburg position, the body is laid flat on the back (supine) with the feet higher than the head by 15-30 degrees.

**30. Gastric lavage should not be done in:**
a. Antipsychotic drug poisoning
b. Corrosive poisoning
c. Organophosphorus poisoning
d. Organochlorine poisoning
**Answer:** b

**Rationale:** (External) Lavage is contraindicated in corrosive (strong acid/alkali) ingestion because re-introducing the chemical to the esophagus during removal can cause further burns or perforation.

**31. Which of the following clinical nursing practices is recommended as most important to healthcare and nursing professionals today?**

a. Primary care nursing
b. Community-based nursing
c. Authoritative nursing
d. Evidence-based practice

**Answer:** d **Rationale:** (External) Evidence-based practice (EBP) ensures that nursing care is based on the most current, proven research rather than just tradition or personal intuition.

**32. The oral clinical thermometer records a temperature of 102°F in a patient scheduled for surgery, but the patient is afebrile to touch. The first thing to be done by the recording nurse is to:**

a. inform the in-charge nurse
b. inform the doctor
c. validate the finding
d. document the finding

**Answer:** c
**Rationale:** (External) When clinical signs (patient feeling cool to the touch) do not match the equipment reading (high fever), the nurse must first re-check the measurement to ensure accuracy.

**33. Which route one uses to identify hypothermia in a new born?**

a. Oral
b. Aural
c. Rectal
d. Surface probe

**Answer:** c
**Rationale:** (External) Rectal temperature is considered a reliable measure of core body temperature in neonates to accurately diagnose hypothermia.

**34. A known admitted cardiac patient develops dyspnea. What should the attending nurse do first before other activities?**

a. Remove pillows from under the head
b. Keep the patient in left-side up position
c. Elevate the foot end of the bed
d. Keep the patient in propped-up position

**Answer:** d **Rationale:** (External) Propping the patient up (high Fowler's position) uses gravity to lower the diaphragm and reduce the work of breathing, providing immediate relief for dyspnea.

**35. In the critical-care pain observation tool, which facial expression has been given the score of 2?**

a. Relaxed, neutral

b. Tense
c. Grimacing
d. Shouting
**Answer:** c **Rationale:** (External) In the CPOT tool, facial expressions are scored: 0 for relaxed, 1 for tense (frowning), and 2 for grimacing (deeply furrowed brow, eyes tightly closed).

**36. Which method of documentation uses the categories "data, action and response" (DAR) to facilitate nurse's daily charting?**
a. Narrative notes
b. Focus charting
c. Case management model
d. Minimum data set
**Answer:** b **Rationale:** (External) Focus charting (DAR) organizes information into the Data (subjective/objective), Action (nursing intervention), and Response (patient's reaction) to the care provided.

**37. When implementing the plan of care for a patient receiving intravenous therapy, which nursing practice would be most appropriate?**
a. Changing the IV catheter entry site daily
b. Changing the tubings every 8 hours
c. Increasing the rate to catch up, if the correct amount has not been infused at the end of the shift
d. monitoring the flow rate once every hour
**Answer:** d **Rationale:** (External) Monitoring the flow rate hourly ensures the infusion is on schedule and allows for early detection of complications like infiltration or occlusion.

**38. While administering a blood transfusion, the ideal nursing care recommended to identify a blood transfusion reaction is:**
a. Inspecting 15 minutes after the infusion is started
b. Inspecting at the end of transfusion
c. Inspecting once in every 30 minutes
d. Inspecting whenever the patient complains
**Answer:** c
**Rationale:** (External) Frequent, scheduled monitoring (such as every 30 minutes after the initial critical 15-minute window) is necessary to detect delayed transfusion reactions.

**39. When caring for a patient with chronic lung disease on oxygen therapy by nasal canula, the most important check, that is expected of the nurse is:**
a. The oxygen must be humidified
b. The rate will be 2 L/min or less
c. Periodic sampling of arterial blood for ABG
d. The rate will be 6 L/min or more
**Answer:** b
**Rationale:** (External) In patients with chronic lung disease (like COPD), high oxygen levels can suppress their "hypoxic drive" to breathe; thus, low-flow oxygen (≤2 L/min) is typically maintained.

**40. Which nursing action is inappropriate when performing oro-pharyngeal suctioning on a patient?**
a. Using sterile technique
b. Applying suction as the catheter is being introduced
c. Flushing the catheter with saline between catheter insertions
d. Limiting suction to 15 second intervals at one time
. **Answer:** b
**Rationale:** (External) Suction should never be applied while *inserting* the catheter as it can cause tissue trauma and deplete oxygen; it should only be applied intermittently while withdrawing the catheter.

**41. Dilated pupil could result from:**
a. Structural lesions in the pons
b. Morphine poisoning
c. Pilocarpine eye drops instillation
d. Brain death
**Answer:** d
**Rationale:** (External) Brain death typically results in fixed, dilated (mydriatic) pupils because the brainstem's control over pupillary constriction is lost.

**42. Rest is needed in patients with coronary artery disease to**
**:** a. Correct arrhythmias
b. Reduce oxygen requirements of the body
c. Reduce the size of the heart
d. Reduce the tendency for insomnia
**Answer:** b
**Rationale:** (External) Resting lowers the heart rate and metabolic demand, thereby reducing the workload on the heart and its need for oxygen, which is critical when coronary arteries are compromised.

**43. Myasthenia gravis is a disease of:**
a. Neuromuscular junction
b. Anterior horn cells
c. Skeletal muscle
d. Spinal cord
**Answer:** a
**Rationale:** (External) Myasthenia gravis is an autoimmune disorder where antibodies destroy or block acetylcholine receptors at the junction between nerves and muscles.

**44. Parkinson's disease is characterized by the following, EXCEPT:**
a. Uniform spasticity
b. Postural instability
c. Tremors
d. Bradykinesia
**Answer:** a

**Rationale:** (External) Parkinson's is characterized by "rigidity" (cogwheel or lead-pipe), not "spasticity." Spasticity is more characteristic of upper motor neuron lesions like stroke or MS.

**45. One of the following drugs cannot be used in hypertension management:**
a. Nifedipine
b. Dopamine
c. Propranolol
d. Reserpine
**Answer:** b
**Rationale:** (External) Dopamine is a vasopressor used to *increase* blood pressure in cases of shock; it would worsen hypertension.

**46. The typical ECG pattern (in the appropriate leads) of Acute Myocardial Infarction:**
a. ST Depression and T Wave Inversion
b. ST Segment Elevation
c. Deep T Wave Inversion
d. Right Bundle Branch Block pattern
**Answer:** b
**Rationale:** (External) ST-segment elevation (STEMI) is a hallmark sign of acute myocardial injury indicating a complete blockage of a coronary artery.

**47. One of the following drugs is used to lower blood cholesterol:**
a. Diltiazem
b. Propranolol
c. Frusemide
d. Atorvastatin
**Answer:** d **Rationale:** (External) Atorvastatin belongs to the "statin" class of medications, which work by inhibiting the enzyme HMG-CoA reductase to lower cholesterol production in the liver.

**48. One of the following is an antiplatelet drug:**
a. Digoxin
b. Streptokinase
c. Aspirin
d. Dobutamine
**Answer:** c **Rationale:** (External) Aspirin inhibits platelet aggregation, helping to prevent the formation of blood clots in the arteries.

**49. The drug that is used to treat a cyanotic spell in a child is:**
a. Morphine
b. Pethidine
c. Diazepam
d. Haloperidol
**Answer:** a
**Rationale:** (External) In Tetralogy of Fallot, morphine is used during "Tet spells" to calm the child and reduce the respiratory rate and infundibular spasm, improving oxygenation.

**50. The supportive cells of the nervous system are:**
a. T cells
b. Stem cells
c. Glial cells
d. Astrocytes
**Answer:** c **Rationale:** (External) Glial cells (or neuroglia) provide physical support, nutrients, and protection for neurons in the nervous system. (Astrocytes are a *type* of glial cell, but glial cells is the broader category).
**51. A 35-year old smoker with gangrene toe most probably suffers from:**
a. Thrombo-angitis obliterans
b. Reynaud's disease
c. Atherosclerosis
d. Arterio-venous fistula
**Answer:** a **Rationale:** (External) Also known as Buerger's disease, thromboangiitis obliterans is strongly associated with tobacco use and causes inflammation and clotting in small/medium arteries of the extremities, often leading to gangrene.

**52. Nursing activities shown to potentially increase intracranial pressure include:**
a. Raising the head of the bed to 30 degree
b. Applying therapeutic touch
c. Endo-tracheal suctioning
d. Speaking softly
**Answer:** c **Rationale:** (External) Endotracheal suctioning can trigger coughing and a Valsalva-like maneuver, which significantly spikes intracranial pressure (ICP).

**53. The treatment of mitral stenosis is:**
a. Balloon Valvotomy
b. PTCA
c. By-Pass Surgery
d. Angiogram
**Answer:** a
**Rationale:** (External) Balloon valvotomy (or valvuloplasty) is a procedure to widen a narrowed (stenotic) heart valve using a balloon-tipped catheter.

**54. One of the following is a new test used in acute chest pain:**
a. SGOT estimation
b. Troponin T or I estimation
c. Blood Cholesterol estimation
d. LDH estimation
**Answer:** b **Rationale:** (External) Troponin T and I are highly specific markers for cardiac muscle injury and have replaced older tests like SGOT and LDH for diagnosing myocardial infarction.

**55. The nurse should expect a patient who has chronic renal failure to be given erythropoietin (Epogen) to:**
a. Elevate the WBC count

b. Enhance the maturation of thrombocytes
c. Increase the production of platelets
d. Stimulate the synthesis of red blood cells
**Answer:** d **Rationale:** (External) Healthy kidneys produce erythropoietin to trigger RBC production. In renal failure, this hormone is deficient, leading to anemia; synthetic Epogen is given to stimulate RBC synthesis.

**56. When teaching the care-givers of a patient who has dementia of the Alzheimer type, a nurse should stress the importance of:**
a. Increased stimuli
b. A predictable environment
c. Restricted activities
d. Independent decision making
**Answer:** b
**Rationale:** (External) A consistent, predictable routine and environment help reduce confusion, anxiety, and behavioral outbursts in patients with Alzheimer's.

**57. Which of the following blood values on the laboratory report should a nurse expect, when assessing a patient who has emphysema?**
a. PCO2 52 mm Hg
b. pH 7.48
c. PO2 94 mm Hg
d. HCO3 21 mEq/2
**Answer:** a
**Rationale:** (External) Emphysema impairs gas exchange, leading to the retention of carbon dioxide (hypercapnia), resulting in an elevated PCO2 (normal is 35-45 mmHg).

**58. Which of the following conditions would a nurse recognize as contributing to the development of respiratory acidosis?**
a. COPD
b. Hyperventilation
c. Diarrhea
d. Achalasia
**Answer:** a
**Rationale:** (External) Chronic obstructive pulmonary disease (COPD) causes hypoventilation and CO2 retention, which directly leads to respiratory acidosis.

**59. Which of the following outcomes observed by the nurse during the drain cycle of peritoneal dialysis should be reported immediately to the physician?**
a. Clear yellow output
b. Cloudy output
c. Patient complaint of slight cramping
d. A drain output of 50cc less than instilled
**Answer:** b
**Rationale:** (External) Cloudy dialysate outflow is an early and significant sign of peritonitis, a serious complication of peritoneal dialysis.

**60. Which of the following foods should be removed from the dietary tray of a patient who has hepatic encephalopathy?**
a. Idli
b. Drumstick leaves
c. Fresh fruit
d. Eggs
**Answer:** d
**Rationale:** (External) Hepatic encephalopathy is caused by the liver's inability to process ammonia, a byproduct of protein breakdown. High-protein foods like eggs are often restricted to reduce ammonia levels.

**61. Which of the following findings would a nurse identify as indicative of septic shock in a patient?**
a. Bradycardia
b. Elevated JVP
c. Cool, clammy skin
d. S3 gallop
**Answer:** c **Rationale:** (External) As septic shock progresses into the "cold phase," peripheral vasoconstriction occurs to divert blood to vital organs, resulting in cool, clammy skin and hypotension.
**62. The nurse should instruct a patient who is to receive Digoxin (Lanoxin) to report development of which of the following side effects?**
a. Ringing in the ears
b. Loss of appetite
c. Signs of bruising
d. Sensitivity to sunlight
**Answer:** b **Rationale:** (External) Early signs of digoxin toxicity often include gastrointestinal symptoms like anorexia (loss of appetite), nausea, and vomiting.

**63. Enteric fever is transmitted by:**
a. Inhalation
b. Ingestion
c. Inoculation
d. insects
**Answer:** b **Rationale:** (External) Enteric fever (Typhoid) is transmitted via the fecal-oral route, usually through the ingestion of contaminated food or water.

**64. Nursing care for a patient who has polycythemia vera would focus on preventing?**
a. Dysrhythmias
b. Hypotension
c. Thrombosis
d. Decubitus ulcers
**Answer:** c **Rationale:** (External) Polycythemia vera involves an overproduction of red blood cells, making the blood more viscous (thick) and significantly increasing the risk of blood clots (thrombosis).

**65. The length of the spinal cord in an adult male is:**
a. 18 cm
b. 45 cm
c. 50 cm
d. 36 cm
**Answer:** b
**Rationale:** (External) In an average adult male, the spinal cord is approximately 45 cm (18 inches) long.

**66. When caring for a patient who is on a mechanical ventilator, the nurse should monitor the patient for which of the following complications?**
a. Flail chest
b. Pleural effusion
c. Pneumothorax
d. Pulmonary embolus
**Answer:** c
**Rationale:** (External) Positive pressure from a ventilator can cause over-distension of the alveoli, leading to a ruptured bleb and air in the pleural space (pneumothorax/barotrauma)
.
**67. Broca's area controls:**
a. Sensory functions
b. Speech
c. Emotions
d. Motor functions
**Answer:** b **Rationale:** (External) Located in the frontal lobe, Broca's area is the primary center for motor speech production.

**68. Who invented the Blood grouping as A, B, O?**
a. Landsteiner
b. John Gibbon
c. William Harvey
d. Robert Boucher
**Answer:** a **Rationale:** (External) Karl Landsteiner discovered the A, B, and O blood groups in 1900, for which he received the Nobel Prize.

**69. Which of the following vitamins is soluble in water?**
a. A
b. E
c. C
d. D
**Answer:** c
**Rationale:** (External) Vitamins C and all B-complex vitamins are water-soluble; vitamins A, D, E, and K are fat-soluble.

**70. How many lobes are present in Right lung?**

a. 7
b. 2
c. 3
d. 9
**Answer:** c
**Rationale:** (External) The right lung has three lobes (superior, middle, and inferior), while the left lung has only two
.

**71. Which plane divides the brain into unequal right and left portions?**
a. Frontal plane
b. Transverse plane
c. Mid-sagittal plane
d. Para-sagittal plane
**Answer:** d **Rationale:** (External) A sagittal plane divides the body into right and left. If it is exactly in the middle, it is "mid-sagittal"; if it is off-center (unequal), it is "para-sagittal."

**72. Which channels are opened during depolarization in metabolism?**
a. K +
b. Na +
c. Mg +
d. Ca +
**Answer:** b
**Rationale:** (External) During the depolarization phase of an action potential, voltage-gated sodium (Na+) channels open, allowing Na+ to rush into the cell.

**73. What is the outermost layer of heart called?**
a. Endocardium
b. Epicardium
c. Myocardium
d. Pericardium
**Answer:** b
**Rationale:** (External) The epicardium is the outermost layer of the heart wall itself (also known as the visceral layer of the serous pericardium). (Note: The pericardium is the sac surrounding the heart).

**74. Cholesterol is important in the human body for:**
a. Angiogenesis
b. Cell membrane structure
c. Enzyme synthesis
d. Osteogenesis
**Answer:** b
**Rationale:** (External) Cholesterol is a vital structural component of all animal cell membranes, maintaining their integrity and fluidity.

**75. In the P, Q, R, S waves in E.C.G., 'P' wave represents?**
a. Atrial depolarization

b. Atrial repolarisation
c. Ventricular depolarization
d. Ventricular repolarisation
**Answer:** a
**Rationale:** (External) The P wave represents the electrical impulse spreading through the atria, causing them to contract (atrial depolarization).

**76. To calculate cardiac output, heart rate is multiplied with?**
a. Stroke volume
b. Systemic arterial pressure
c. Pulmonary arterial pressure
d. Circulatory volume
**Answer:** a **Rationale:** (External) Cardiac Output (CO) = Heart Rate (HR) × Stroke Volume (SV).

**77. In which organ are the 'Kupfer cells' present?**
a. Brain
b. Heart
c. Liver
d. Pancreas
**Answer:** c **Rationale:** (External) Kupffer cells are specialized macrophages located in the liver that filter bacteria and debris from the blood.

**78. "Gonads" means:**
a. Salivary glands
b. Sebaceous glands
c. Sweat glands
d. Testis and ovaries
**Answer:** d
**Rationale:** (External) Gonads are the primary reproductive organs that produce gametes: the testes in males and ovaries in females.
**79. In proteins classification, class 'A' proteins are:**
a. Animal proteins
b. Vegetable proteins
c. Oil proteins
d. Milk proteins
**Answer:** a **Rationale:** (External) Class 'A' proteins (complete proteins) contain all the essential amino acids in the correct proportions; these are primarily found in animal sources.

**80. What is the scientific name of vitamin B6?**
a. Biotin
b. Pyridoxine
c. Nicotinic acid
d. Thiamine
**Answer:** b
**Rationale:** (External) Pyridoxine is the most common form of Vitamin B6.