

# Khyber Medical University – Centralized Admission Test III – 2023 – “B”

Total Questions = 100

Time Allowed 90 minutes

Total Marks = 100

NOTE Attempt all Questions. All questions carry equal marks. Every correct answer carry one mark. There is no negative marking. Any sort of electronic device/gadgets/mobile phone NOT allowed. Mark your answers on response (bubble) sheet.

1. The activity of the radioactive material can be expressed in the unit of
  - a. Curie → common unit
  - b. Becquerel → SI unit
  - c. Tesla
  - d. Both a and b
2. Uranium-235 decays the Thorium-234 by the process of
  - a. Fission
  - b. Beta decay
  - c. Alpha radiation
  - d. Gamma radiation
3. Which of the following organelles is responsible for cellular respiration?
  - a. Nucleus
  - b. Golgi apparatus
  - c. Mitochondria
  - d. Ribosomes
4. What is the term for the process by which plants convert light energy into chemical energy?
  - a. Photosynthesis
  - b. Transpiration
  - c. Respiration
  - d. Fermentation
5. Which of the following is NOT a function of the liver?
  - a. Detoxification
  - b. Protein synthesis
  - c. Digestion
  - d. Storage of glycogen
6. In humans, which type of blood vessel carries oxygenated blood away from the heart?
  - a. Vein
  - b. Artery
  - c. Capillary
  - d. Aorta
7. Which hormone is responsible for regulating blood sugar levels in the human body?
  - a. Insulin
  - b. Oxytocin
  - c. Thyroxine
  - d. Estrogen
8. What is the largest organ in the human body?
  - a. Heart
  - b. Brain
  - c. Skin
  - d. Liver
9. Which of the following is a sex-linked genetic disorder?
  - a. Down syndrome
  - b. Huntington's disease
  - c. Hemophilia
  - d. Cystic fibrosis
10. Which process involves the movement of molecules from an area of higher concentration to an area of lower concentration and does not require energy?
  - a. Active transport
  - b. Osmosis
  - c. Diffusion
  - d. Endocytosis
11. Which part of a plant primarily carries out photosynthesis?
  - a. Roots
  - b. Stems
  - c. Leaves
  - d. Flowers
12. What is the functional unit of the nervous system?
  - a. Neuron
  - b. Hormone
  - c. Cell
  - d. Tissue
13. Which of the following is NOT a type of muscle in the human body?
  - a. Smooth muscle
  - b. Cardiac muscle
  - c. Skeletal muscle
  - d. Cartilage muscle
14. What is the primary function of red blood cells?
  - a. Transport of oxygen
  - b. Digestion of food
  - c. Protection against pathogens
  - d. Blood clotting
15. Which type of cell division results in the production of gametes (sperm and egg cells)?
  - a. Mitosis
  - b. Meiosis
  - c. Binary fission
  - d. Budding
16. What is the smallest bone in the human body?
  - a. Femur
  - b. Tibia
  - c. Stapes (in the ear)
  - d. Ulna
17. In which part of the digestive system does the majority of nutrient absorption occur?
  - a. Stomach
  - b. Small intestine
  - c. Large intestine
  - d. Esophagus
18. Which of the following is a viral disease that primarily affects the immune system?
  - a. Influenza
  - b. Tuberculosis
  - c. AIDS
  - d. Malaria
19. Which of the following is responsible for the formation of antibodies in response to an infection?
  - a. T cells
  - b. B cells
  - c. Red blood cells
  - d. Platelets
20. What is the function of the cerebellum in the brain?
  - a. Regulation of body temperature
  - b. Control of voluntary muscle movements and balance
  - c. Emotion and memory processing
  - d. Vision and visual processing
21. What is the role of white blood cells in the immune system?
  - a. Transport of oxygen
  - b. Phagocytosis
  - c. Blood clotting
  - d. Digestion of food
22. Which part of a cell is responsible for protein synthesis?
  - a. Nucleus
  - b. Ribosomes
  - c. Mitochondria
  - d. Golgi apparatus
23. Which of the following is responsible for the breakdown of fatty acids and detoxification of alcohol in the liver?
  - a. Peroxisome
  - b. Lysosome
  - c. Ribosome
  - d. Golgi apparatus
24. Which of the following is an example of an autotrophic organism?
  - a. Rabbit
  - b. Mushroom
  - c. Algae
  - d. Tapeworm
25. Which enzyme is responsible for breaking down starch into maltose in the human digestive system?
  - a. Lipase
  - c. Amylase
  - b. Pepsin
  - d. Trypsin

$E = hf$   
 $h = \frac{E}{f} = \frac{kg \cdot m^2 \cdot s^{-2}}{s^{-1}}$   
 $P = hf_m$

$kg \cdot m \cdot s^{-1}$   
 $\frac{m \cdot v}{s}$

What is the term for organism development?  
 a. Growth  
 b. Development  
 c. Differentiation  
 d. Morphogenesis

26. Which part of the brain is responsible for regulating basic bodily functions such as breathing and heart rate?  
 a. Cerebrum      b. Cerebellum  
 c. Medulla oblongata      d. Hypothalamus
27. Plank's constant has the dimension of.  
 a. Energy      b. work  
 c. Linear momentum      d. Angular momentum
28. The body in equilibrium must not have.  
 a. Kinetic Energy      b. Momentum  
 c. Velocity      d. Acceleration
29. The area under the acceleration time graph represents  
 a. Displacement      b. Velocity  
 c. Change in velocity      d. Distance traveled
30. The rocket's motion in space is according to the law of conservation of  
 a. Energy      b. Charge  
 c. Mass      d. Momentum
31. The particle of mass has momentum P, then its kinetic energy will be  
 a.  $mp$       b.  $mp^2$   
 c.  $p^2/m$       d.  $p^2/2m$
32. A helicopter of mass  $3 \times 10^3$  Kg raises vertically with the constant speed of 2 m/s, what resultant force acts on the helicopter?  
 a. Zero      b.  $3 \times 10^4$  N downward  
 c. 4.5 N upward      d.  $7.5 \times 10^4$  N upward
33. If the mass of the body is made three times and the velocity becomes double, then the kinetic energy will increase  
 a. 6 times      b. 12 times  
 c. 18 times      d. 24 times
34. Angle that a body traverses at the center of a circle in two turns (rev) is  
 a.  $4\pi$  rad      b.  $720^\circ$   
 c. 12.6 rad      d. All of the above
35. A circular disc of mass M and radius R is rotating about its axis with uniform speed v. Its kinetic energy is  
 a.  $Mv^2$       b.  $\frac{1}{2} Mv^2$   
 c.  $\frac{1}{4} Mv^2$       d.  $\frac{1}{8} Mv^2$
36. The time period of communication satellite is.  
 a. 1 hour      b. 2 hours  
 c. 12 hours      d. 24 hours
37. If the amplitude of wave at a distance r from a point source is A then, amplitude at a distance 2r will be  
 a. 2A      b. A  
 c. A/2      d. A/4
38. The ratio between the velocity of sound in air at 4 atm in that at 3 atm will be  
 a. 1.1:1      b. 4:1  
 c. 1:4      d. 3:1
39. The device which can be used for precise measurement of wavelength is  
 a. Grating plate      b. Prism  
 c. Polaroid      d. Michelson interferometer

40. Which thermodynamic temperature is equivalent to  $501.25^\circ C$   
 a. 775.00 K      b. 228.70 K  
 c. 774.85 K      d. 228.85 K
41. A charge divided into two parts "q" and "Q-q" separated by a distance of "R". The force of repulsion between them will be maximum when  
 a.  $q=Q/4$       b.  $q=Q/2$   
 c.  $q=Q$       d.  $q=Q/8$
42. A close surface contains equal and opposite charges the net electric flux to the closed surface is  
 a. Maximum      b. Minimum  
 c. Zero      d. Positive as well as negative
43. A wire of uniform cross section A, Length L and resistance R is cut into two equal pieces. The resistivity of each will be,  
 a. the same      b. 1/4  
 c. 1/2      d. Double
44. If the direction of the initial velocity of a charged particle is neither along nor perpendicular to that of the magnetic field then the orbit will be  
 a. Circle      b. Helix  
 c. Ellipse      d. Straight
45. An electron enters a magnetic field acting vertically downwards with velocity v from east. The electron is deflected along  
 a. North      b. West  
 c. East      d. South
46. The mechanical energy spent by the external agency is converted into electrical energy stored in the coil. This relates to  
 a. Ohm's law      b. Coulomb's law  
 c. Lenz's law      d. Newton's law of motion
47. Conversion of alternating current to direct current is called  
 a. Amplification      b. Rectification  
 c. Modulation      d. Both b and c
48. If the speed of the moving particle increases, the wavelength associated with it will  
 a. Increases      b. Decreases  
 c. Not change      d. None of these
49. The intensity of X-rays depends upon  
 a. Filament current      b. Nature of material of target  
 c. Operating voltage      d. All of the above
50. A LASER beam can be sharply focused because it is  
 a. Highly coherent      b. Plane polarized  
 c. Intense      d. Highly directional
51. Atomic mass unit in term of energy is nearly equal to  
 a. 931 KeV      b. 931 MeV  
 c. 39 MeV      d. 139 KeV

$501.25$   
 $273.15$   
 $774.40$

$501.25$   
 $273$   
 $774.25$

$I \propto \frac{1}{r^2}$

$\frac{1}{2} m v^2$   
 $\frac{1}{2} (3N) (2V)^2$

$360^\circ = 2\pi$

$K.E = \frac{1}{2} m v^2$   
 $= \frac{1}{2} m v \cdot v$   
 $= \frac{1}{2} P v$

$E = \frac{h c}{\lambda}$

52. What is the term for the process by which an organism develops from a single cell into a multicellular organism?  
 a. Growth                      b. Reproduction  
 c. Development                d. Differentiation
53. Which of the following is a condition characterized by the loss of bone density and increased risk of fractures?  
 a. Osteoporosis                b. Arthritis  
 c. Diabetes                      d. Asthma
54. Which of the following is a viral disease that affects the respiratory system and is caused by the SARS-CoV-2 virus?  
 a. Influenza                      b. Tuberculosis  
 c. COVID-19                    d. Malaria
55. Which molecule carries the genetic information in cells and is responsible for the transmission of traits from one generation to the next?  
 a. DNA                            b. RNA  
 c. ATP                              d. Enzyme
56. Which of the following is responsible for maintaining the shape and structure of animal cells?  
 a. Cell wall                        b. Cell membrane  
 c. Cytoplasm                      d. Cytoskeleton
57. Which of the following is a nitrogenous waste product excreted by humans?  
 a. Urea                              b. Glucose  
 c. Amino acids                  d. Bilirubin
58. Which of the following is a disorder characterized by an abnormal increase in the number of white blood cells and is often associated with cancer?  
 a. Anemia                         b. Leukemia  
 c. Malaria                         d. Hemophilia
59. What is the function of the alveoli in the respiratory system?  
 a. Production of mucus  
 b. Transport of oxygen in the blood  
 c. Exchange of gases (oxygen and carbon dioxide)  
 d. Filtering of air
60. The virus is:  
 a. Facultative parasite            b. Saprophyte  
 c. Obligate intracellular parasite    d. Ectoparasite
61. In Mendel's experiments with pea plants, what is the term for the traits that disappeared in the F1 generation and reappeared in the F2 generation?  
 a. Recessive traits                b. Dominant traits  
 c. Homozygous traits                d. Heterozygous traits
62. \_\_\_\_\_ me, I would be happy to dedicate a few extra hours for the humanitarian cause.  
 a. As of                              b. As for  
 c. As from                            d. As to
63. Choose the correct possessive form of the noun "The book belongs to-----."  
 a. It's                                b. It  
 c. Its'                                d. Its
64. Are we \_\_\_\_\_ to leave on vacation?  
 a. already                         b. altogether  
 c. all together                      d. all ready
65. He is very careful. He \_\_\_\_\_ his children to drive his car in rush hour traffic.  
 a. does not allow                b. did not allow  
 c. allowed                         d. Allow
66. The coach's insistence on fitness has become \_\_\_\_\_. He yells at players all the time.  
 a. Emotional                        b. dilatory  
 c. obsessive                        d. Rational
67. What literary term is used to describe a figure of speech where contradictory terms appear in conjunction?  
 a. Alliteration                      b. Paradox  
 c. Simile                            d. Oxymoron
68. What is the meaning of the idiom "Break a leg"?  
 a. Literally Break a leg            b. Bad Luck  
 c. Good Luck                        d. Running fast
69. What is the antonym for "generous"?  
 a. Giving                            b. Stingy  
 c. Kind                              d. Selfish
70. Which of the following is a synonym for "Exquisite"?  
 a. Beautiful                        b. Ugly  
 c. Mediocre                        d. Boring
71. Who was the founder of all India Muslim League which later played a crucial role in the creation of Pakistan?  
 a. Muhammad Ali Jinnah            b. Liaqat Ali Khan  
 c. Nawab Saleemullah Khan        d. Ch Rehmat Ali
72. When did Pakistan become member of the United Nation?  
 a. 1947                              b. 1971  
 c. 1956                              d. 1949
73. When did Pakistan become a nuclear power?  
 a. 1995                              b. 1998  
 c. 1999                              d. 2004
74. The mass of 2 moles of sodium hydroxide will be:  
 a. 2g                                 b. 20g  
 c. 40g                                d. 80g
75. Which has the strongest bonding in the solid state?  
 a. Hydrogen Chloride (HCl)        b. Chlorine (Cl<sub>2</sub>)  
 c. Xenon (Xe)                      d. Sodium Chloride (NaCl)
76. Molten NaCl conducts electricity due to the presence of  
 a. Free Electrons                    b. Free molecules  
 c. Free ions                         d. Atoms of Na and Cl

NaOH  
 23 + 16 + 1  
 40

2 x 40

"B"

77. The radioactive isotope of hydrogen is called:  
 a. tritium                      b. deuterium  
 c. protium                      d. ortho-hydrogen
78. Which of the following is a pure substance:  
 a. Sea water                      b. Brass  
 c. Tap water                       d. Graphite
79. Covalent network crystals have:  
 a. higher melting point than molecular crystals  
 b. lower melting point than molecular crystals  
 c. discrete molecules linked by Van der Waals forces  
 d. hydrogen bonding
80. Molecular mass of water (18g) means:  
 a. 1-mole molecules of water  
 b. 1-gram molecules of water  
 c. 3-gram atoms  
 d. all
81. One mole of CO<sub>2</sub> contains:  
 a.  $6.022 \times 10^{23}$  atoms of oxygen  
 b. 22-gram electrons  
 c.  $6.022 \times 10^{23}$  atoms of carbon  
 d. both B & C
82. The number of moles of CO<sub>2</sub> which contains 16g of oxygen is:  
 a. 0.25                       b. 0.5  
 c. 0.75                      d. 1
83. Avogadro's number may represent:  
 a. volume of particles     b. number of particles  
 c. mass of particles      d. All of the above
84. Which of the following is an inorganic fertilizer:  
 a. manure                      b. urea  
 c. ammonium nitrate      d. All
85. Diameter of an atom is in the order of:  
 a. 0.2m                      b. 0.2mm  
 c. 0.2nm                      d. 0.2µm
86. Biocatalytical proteins are:  
 a. Enzymes                      b. Substrate  
 c. Lipids                      d. any of above
87. Inner transition elements are called?  
 a. Lanthanides                      b. Actinides  
 c. Rare earth metals       d. All
88. Which of the following cannot exist in solution:  
 a. O<sup>2-</sup>                      b. H<sup>+</sup>  
 c. Cl<sup>-</sup>                      d. Na<sup>+</sup>
89. Among halogens the lowest boiling point is of:  
 a. Fluorine                      b. Chlorine  
 c. Bromine                      d. Iodide
90. Iodine is solid due to:  
 a. Strong covalent bond  
 b. Large value of dipole moment  
 c. High polarizability  
 d. Strong hydrogen bonding
91. Which of the following is not a fatty acid:  
 a. Propanoic acid                      b. Acetic acid  
 c. Phthalic acid                      d. Butanoic acid
92. The formula of palmitic acid is:  
 a. C<sub>15</sub>H<sub>31</sub>COOH                      b. C<sub>13</sub>H<sub>27</sub>COOH  
 c. C<sub>16</sub>H<sub>33</sub>COOH                      d. C<sub>17</sub>H<sub>35</sub>COOH
93. Which of the following is not an amino acid:  
 a. glutamic acid                       b. lactic acid  
 c. aspartic acids                      d. glycine
94. Reaction at anode is called:  
 a. oxidation                      b. reduction  
 c. redox                      d. decomposition
95. Which of the following is not a macromolecule:  
 a. Thyroxin                      b. Haemoglobin  
 c. Insulin                       d. maltose
96. Among the halogens the rare element is:  
 a. Fluorine                      b. Chlorine  
 c. Astatine                      d. Iodine
97. The melting points and boiling points up to the middle of 3d-series:  
 a. Increases                      b. Decreases  
 c. Remain same                      d. No regular trend
98. Hydrocarbons which burn with smoky flame are called:  
 a. Aliphatic                      b. Alicyclic  
 c. Aromatic                      d. Aldehyde
99. When one hydrogen atom of an alkane is removed with one bonding electron, then it is called:  
 a. Alkene                       b. Alkyl radical  
 c. Aldehyde                      d. Saturated hydrocarbon
100. Which one has the lowest density at room temperature?  
 a. Ne (18) 3L  
 b. N<sub>2</sub> (28)  
 c. NH<sub>3</sub> (17)  
 d. CO<sub>2</sub> (44)
- Handwritten calculations:  
 $14 + 1 = 17$   
 $12 + 16 = 28$   
 $0.25 \text{ mol } = 6 \text{ CO}_2$   
 $328$