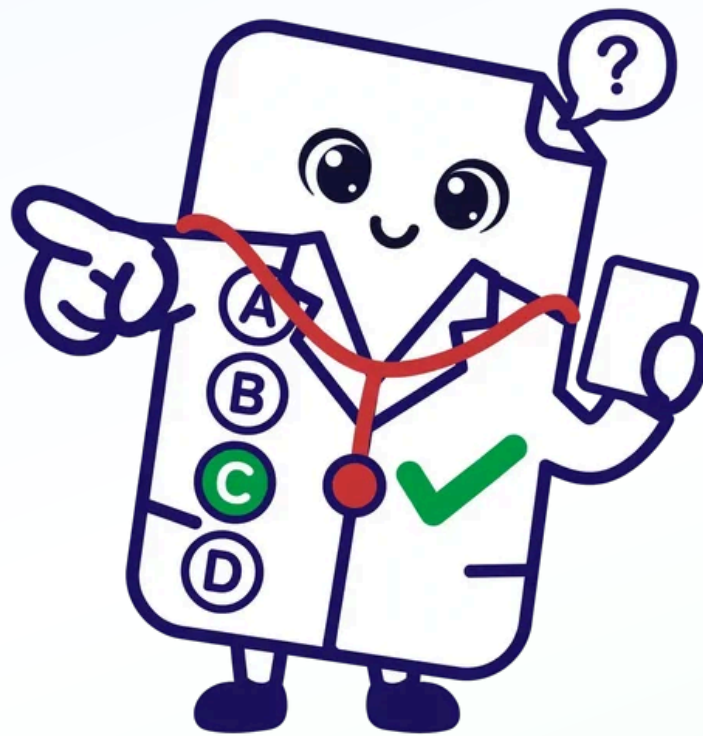




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# KMU Entry Test Preparation Book 2026

A full model paper in the real KMU pattern, with answer key



180 MCQs

Real KMU subject split

Answer key + online explanations

## How to use this book

1. Sit each model paper in one go, in 216 minutes, with a pen and the answer sheet of your choice.
2. Mark yourself with the answer key at the back.
3. Every answer in the key is a link. Tap it to read why that option is right on TestUstad, free.

### Want this paper timed and graded for you?

Practise every KMU subject free, chapter by chapter, at [testustad.com/exams/kmu-entry-test](https://testustad.com/exams/kmu-entry-test)

## What is in this book

180 MCQs across one paper, each drawn in the same subject split as the real KMU paper:

- Biology: 81 MCQs per paper
- Chemistry: 45 MCQs per paper
- Physics: 36 MCQs per paper
- English: 9 MCQs per paper
- Analytical and Logical Reasoning: 9 MCQs per paper



MODEL PAPER 1 OF 1

# KMU Entry Test

180 MCQs · 216 minutes · answer key at the back



## Biology

81 MCQs

### 1. Which of the following cells possess Nissl's granules?

- ☐ A Nerve cells
- ☐ B WBC
- ☐ C RBC
- ☐ D Platelets

### 2. \_ is a protein found in milk.

- ☐ A Renin
- ☐ B Insulin
- ☐ C Caesin
- ☐ D Prolactin

### 3. Most disease symptoms appear during.

- ☐ A Lag phase
- ☐ B Log phase
- ☐ C Die
- ☐ D Generation time

### 4. The interval of pacemaker signals from S.A.N to A.V.N is:

- ☐ A 1 second
- ☐ B 0.1 second
- ☐ C 2 seconds
- ☐ D 0.2 second

### 5. Milk sugar is pasteurized by heating for 15 seconds at the temperature of:

- ☐ A 60 oC
- ☐ B 71 oC
- ☐ C 50 oC
- ☐ D 80 oC

### 6. A woman can be bald only when she is

- ☐ A Homozygous dominant
- ☐ B Heterozygous
- ☐ C Homozygous recessive
- ☐ D None of these

### 7. Two individuals formed when two eggs fertilized of the same time results in twins that are genetically different are:

- ☐ A Identical twins
- ☐ B Siamese twins
- ☐ C Fraternal twins
- ☐ D Double twins

### 8. In case of immunity, the first line of body defense is:

- ☐ A Macrophages
- ☐ B Lymphocytes
- ☐ C Blood cells
- ☐ D Skin

9. In humans, the largest body organ is:

- ☐ A Liver
- ☐ B Skin
- ☐ C Brain
- ☐ D Lungs

10. Alveoli are absent in:

- ☐ A Fishes
- ☐ B Amphibians
- ☐ C Birds
- ☐ D Mammals

11. The primitive streak first appears in which labeled stage of embryonic diagram?

- ☐ A A
- ☐ B B
- ☐ C C
- ☐ D D

12. An active athlete has more stamina of running compared to an officer of same age with physically inactive lifestyle. Which of the following organelles has greatly increased in the muscle cells of athlete?

- ☐ A Nucleus
- ☐ B Mitochondria
- ☐ C Golgi bodies
- ☐ D Smooth endoplasmic reticulum (SER)

13. The viruses can reproduce:

- ☐ A Without invading any cell.
- ☐ B In bacterial cell.
- ☐ C By Mitosis
- ☐ D By Meiosis

14. The birds excrete:

- ☐ A Ammonia
- ☐ B Urea
- ☐ C Uric acid
- ☐ D Acetic acid

15. Except during nuclear division, the nucleus has the chromosome in a loosely coiled state known as:

- ☐ A Genes
- ☐ B Ribosomes
- ☐ C DNA
- ☐ D Chromatin

16. Which is an enzyme activator secreted by the intestinal glands:

- ☐ A Amylase
- ☐ B Pepsinogens
- ☐ C Enterokinase
- ☐ D Lipase

17. What is the direction of energy flow in an ecosystem:

- ☐ A Always unidirectional
- ☐ B Always bidirectional
- ☐ C In any direction
- ☐ D Always down directional

**18. A bird's wings are homologous to**

- ☐ A fishes tail fin
- ☐ B dog's front legs
- ☐ C mosquitoes wings
- ☐ D alligator's claws

**19. Which of the following is NOT a bone of upper limb?**

- ☐ A Humerus
- ☐ B Ulna
- ☐ C Femur
- ☐ D Radius

**20. Non-competitive inhibitors react with enzymes at:**

- ☐ A Allosteric site
- ☐ B Active site
- ☐ C Passive site
- ☐ D Regulatory site

**21. The molecular formula of chlorophyll b is:**

- ☐ A  $C_{55}H_{70}O_6N_4Mg$
- ☐ B  $C_{70}H_{55}O_{11}N_5Mg_4$
- ☐ C  $C_{14}H_{55}O_6N_5Mg_3$
- ☐ D  $C_{55}H_{76}O_5N_6Mg_2$

**22. The gland that serve as both exocrine and Endocrine is/are:**

- ☐ A Pancreas
- ☐ B Gonads
- ☐ C Adrenal gland
- ☐ D Both (A) & (B)

**23. What explains the effect on a red blood cell of being placed into pure water?**

- ☐ A Less water leaves the cell than enters it, so the cell shrinks.
- ☐ B More water enters the cell than leaves it, so the cell swells and bursts.
- ☐ C Water enters the cells and none leaves it, so the cell swells and bursts.
- ☐ D Water enters the cell and more leaves it, so the cell shrinks.

**24. Crustaceans are the only arthropods that have:**

- ☐ A chitin in their exoskeleton
- ☐ B chelicitae
- ☐ C three pairs of legs
- ☐ D two pairs of antennae

**25. Which blood group transfusion can be made without risk?**

- ☐ A Group A to Group B
- ☐ B Group AB to Group O
- ☐ C Group A to Group O
- ☐ D Group B to Group AB

**26. Patients of cystic fibrosis (CF) produces thick mucus because of faulty:**

- ☐ A Trans-membrane carrier
- ☐ B  $Cl^-$  ions
- ☐ C  $Na^+$  ions
- ☐ D Mucus membrane

**27. A baby girl is born with hemophilia, which is an X-linked recessive disorder. What are the most likely genotypes of her parents?**

- ☐ A The mother is a carrier and the father is normal
- ☐ B The mother is hemophiliac and the father is normal
- ☐ C The mother is carrier and the father is hemophiliac
- ☐ D Both are normal

**28. Which of the following directly develops into sperms?**

- ☐ A Primary spermatocytes
- ☐ B Spermatids
- ☐ C Secondary spermatocytes
- ☐ D Spermatogonia

**29. Cells that kill cells that display foreign motifs on their surface are:**

- ☐ A Platelets
- ☐ B Cytotoxic T cells
- ☐ C Antigens
- ☐ D Red blood cell

**30. \_ is the branch of Biology used for the identification and interpretation of fossils.**

- ☐ A Evolution
- ☐ B Paleontology
- ☐ C Zoogeography
- ☐ D Biodiversity

**31. If we cover the lateral sides of the Grass-hopper with wax. The system most likely to be affected will be**

- ☐ A Digestive
- ☐ B Circulatory
- ☐ C Respiratory
- ☐ D Excretory

**32. The primary organizer during embryonic development:**

- ☐ A Drives cell division during cleavage
- ☐ B Gives rise to extra embryonic tissues
- ☐ C Secretes signaling molecules to influence the fate of other cells
- ☐ D Folds inwards during gastrulation

**33. If oxygen is available, the complete breakdown of glucose produces \_ ATP molecules in prokaryotes.**

- ☐ A 201
- ☐ B 36
- ☐ C 38
- ☐ D 40

**34. Which of the following is a non-cellular infectious entity?**

- ☐ A Mycoplasma
- ☐ B Escherichia coli
- ☐ C Herpes virus
- ☐ D Diplococcus

**35. Malpighian tubules convert nitrogenous waste into:**

- ☐ A urine
- ☐ B ammonia
- ☐ C uric acid
- ☐ D urea

**36. The soluble part of the cytoplasm is termed as:**

- ☐ A Cisternae
- ☐ B Cytosol
- ☐ C Endocytosis
- ☐ D Both A and B

**37. The role of parietal cells of mucosa is:**

- ☐ A Protein digestion
- ☐ B HCl secretion
- ☐ C Protein absorption
- ☐ D HCl inhibition

**38. Secondary sewage treatment is mainly due to**

- ☐ A Mechanical processes
- ☐ B Biological processes
- ☐ C Physical processes
- ☐ D Chemical processes

**39. Structures found in different species that are believed to have a common evolutionary origin are called:**

- ☐ A Homologous
- ☐ B Analogous
- ☐ C Vestigial
- ☐ D Fossilized

**40. Skeletal disease which cause immobility and fusion of vertebral joints is called**

- ☐ A Disc slip
- ☐ B Sciatica
- ☐ C Arthritis
- ☐ D Spondylosis

**41. \_ reduce the enzymes productivity by blocking the sun entering into the active site due to similar shapes:**

- ☐ A Competitive inhibitors
- ☐ B Non-competitive inhibitors
- ☐ C Co-enzymes
- ☐ D Activators

**42. Chlorophyll a and b chiefly absorb:**

- ☐ A Violet blue light
- ☐ B Orange light
- ☐ C Blue-red light
- ☐ D Red, orange light

**43. All the hormones released by the anterior pituitary are tropic hormones except:**

- ☐ A TSH
- ☐ B STH
- ☐ C ACTH
- ☐ D Gonadotropin hormone

**44. Peptide bonds are important in protein because they:**

- ☐ A Affect solubility
- ☐ B Hold R-groups
- ☐ C Link amino acid
- ☐ D Help in releasing oxygen

**45. The body of \_ consists of segments called proglottis, which contain mainly sexual organs.**

- ☐ A Planaria
- ☐ B Ascaris
- ☐ C Fasciola
- ☐ D Tapeworm

**46. The flaps of the tricuspid valves are attached to muscular extensions of the right ventricle known as:**

- ☐ A Smooth Muscles
- ☐ B Papillary Muscles
- ☐ C Intercostal Muscles
- ☐ D Skeletal Muscles

**47. Specific sequences of four or six nucleotides arranged symmetrically in reverse order where restriction enzymes work are known as**

- ☐ A Okazaki fragment
- ☐ B Palindromic sequences
- ☐ C Promoter sequences
- ☐ D Primer

**48. A woman is homozygous for A negative blood type. A man has an AB-negative blood type. What is the probability that the couple's child will be type B negative?**

- ☐ A 0%
- ☐ B 25%
- ☐ C 50%
- ☐ D 75%

**49. The fertile time in the menstrual cycle is from:**

- ☐ A 6-8 days
- ☐ B 9-15 days
- ☐ C 16-22 days
- ☐ D 22-28 days

**50. All of the following are true about neutrophils, EXCEPT:**

- ☐ A Most abundant form of WBC's
- ☐ B Have a short life span.
- ☐ C Made by the thymus gland.
- ☐ D Released by the bone marrow.

**51. Laiba is trying to determine the percentage of protein in bears because she is a**

- ☐ A Biochemist
- ☐ B Microbiologist
- ☐ C Physiologist
- ☐ D Mycologist

**52. The cartilage present in trachea is:**

- ☐ A Fibrous
- ☐ B Hyaline
- ☐ C Elastic
- ☐ D Neurotic

**53. Which of the following is not related to apoptosis?**

- ☐ A Loss of tail of developing humans embryos
- ☐ B Loss of tissues between developing digits
- ☐ C Controlling the number of neurons
- ☐ D None of the these

**54. Cyanides are potent poisons of the living organism and can kill by inhibiting \_\_, essential for cellular respiration:**

- ☐ A Cytochrome oxidases
- ☐ B Dehydrogenases
- ☐ C Hydrolases
- ☐ D Nucleases

**55. In HIV viruses, reverse transcriptase converts single-stranded RNA into double-stranded viral DNA. This process is called**

- ☐ A Translation
- ☐ B Duplication
- ☐ C Replication
- ☐ D Reverse Transcription

**56. Which of the following animals is not ectothermic?**

- ☐ A Salamander
- ☐ B Great white shark
- ☐ C Polar bear
- ☐ D Butterfly

**57. Turgidity in plants is maintained by:**

- ☐ A Wall pressure
- ☐ B Internal pressure
- ☐ C Vacuole
- ☐ D Osmotic pressure

**58. In earthworm, mucin & enzyme are produced by:**

- ☐ A Intestinal sac
- ☐ B Typhlosole
- ☐ C Oesophagus
- ☐ D Pharyngeal mass

**59. Study of environmental relations is called:**

- ☐ A Physiology
- ☐ B Pulmonology
- ☐ C Morphology
- ☐ D Ecology

**60. Human appendix, coccyx and nictitating membrane of the eye are:**

- ☐ A Vestigial organs
- ☐ B Homologous organs
- ☐ C Analogous organs
- ☐ D Embryonic organs

**61. Which of the following is most abundant in human body:**

- ☐ A Fibrous
- ☐ B Hyaline
- ☐ C Elastic
- ☐ D Flexible

**62. All of the following are co-enzymes except:**

- ☐ A NAD
- ☐ B FAD
- ☐ C NADP
- ☐ D ADP

**63. Chlorophyll molecule contains:**

- ☐ A  $Mg^{2+}$
- ☐ B  $Ca^{2+}$
- ☐ C  $K^{+}$
- ☐ D  $Na^{+}$

**64. The resting membrane potential is:**

- ☐ A -70 mV
- ☐ B -60 mV
- ☐ C -50 mV
- ☐ D -40 mV

**65. In sickle cell hemoglobin only one glutamic acid of normal hemoglobin is replaced by?**

- (A) Valine acid
- (B) Alanine acid
- (C) Arginine acid
- (D) Methionine acid

**66. Who stated this hypothesis? Mosquitoes are involved in the spread of malaria**

- (A) Ronald
- (B) AFA king
- (C) Laveran
- (D) Aristotle

**67. Blood cells are produced by:**

- (A) Liver
- (B) Spleen
- (C) Bone marrow
- (D) Heart

**68. Restriction endonucleases cleave the \_ of duplex DNA.**

- (A) Nitrogenous base
- (B) Base sugar
- (C) Phosphodiester bond
- (D) Hydrogen bond

**69. Position of a gene within a DNA molecule is**

- (A) Locus
- (B) Origin
- (C) Amplicon
- (D) Filial

**70. During birth following events happen. Which one of the following is the correct sequence of these events from start to end? 1- Rupturing of amniotic sac 2- Contraction of myometrium 3- Cutting of umbilical cord 4- Inhibition of progesterone secretion**

- (A) 1 → 2 → 3 → 4
- (B) 2 → 4 → 3 → 1
- (C) 4 → 3 → 2 → 1
- (D) 4 → 2 → 1 → 3

**71. The thymus gland is involved in the maturation of:**

- (A) Platelets
- (B) B-Lymphocytes
- (C) Eosinophils
- (D) T-Lymphocytes

**72. The part of the body which forms a structural and functional unit and is composed of more than one tissue is called**

- (A) Organ
- (B) Organelle
- (C) Organ system
- (D) Whole organism

**73. Vocal cords, which help in voice production are two thin edged fibrous bands, present in:**

- (A) Glottis
- (B) Bronchus
- (C) Larynx
- (D) Trachea
- (E) Pleura

**74. The foetal sex becomes apparant during the:**

- ☐ A First trimester
- ☐ B Second trimester
- ☐ C Third trimester
- ☐ D Both A and B

**75. FADH<sub>2</sub> is produced during which step of Krebs cycle?**

- ☐ A When Isocitrate is converted into alpha - ketoglutarate
- ☐ B When alpha - Ketogluterate is converted into Succinate
- ☐ C When Succinate is converted into Fumarate
- ☐ D When Fumarate is converted into Maltose

**76. All viruses can reproduce only within living organisms, so they are known as:**

- ☐ A Ectoparasites
- ☐ B Endoparasites
- ☐ C Obligative Intracellular Parasites
- ☐ D Facultative Intracellular Parasites

**77. What type of heat exchange is promoted by vasodilation**

- ☐ A Convection
- ☐ B Conduction
- ☐ C Evaporation
- ☐ D Radiation

**78. The middle lamella of the cell wall is composed of:**

- ☐ A Cellulose
- ☐ B pectin
- ☐ C Lignin
- ☐ D Murein

**79. Cells of liver is man associated with phagocytosis are:**

- ☐ A Kupffers cells
- ☐ B Hansans cells
- ☐ C Lupffers cells
- ☐ D Aciner cells

**80. The rate at which the new individuals are added to a population in a unit time is:**

- ☐ A Density
- ☐ B Natality
- ☐ C Mortality
- ☐ D Dispersion

**81. The present giraffe has a long neck compared to its ancestors, Lamarck believed it could be due to**

- ☐ A Natural selection
- ☐ B Inheritance of acquired characteristics
- ☐ C Isolation
- ☐ D Specification



## Chemistry

45 MCQs

82. Substances dissolved in water react better because :

- (A) Water brings them close
- (B) Water helps them in bonding
- (C) Water dissolve them in ions
- (D) Water reacts with them

83. For which of the following equilibrium reaction,  $K_c$  has no units:

- (A)  $N_2 + 3H_2 \rightleftharpoons 2NH_3$
- (B)  $SO_2 + 2O_2 \rightleftharpoons 2SO_3$
- (C)  $CO + H_2O \rightleftharpoons CO_2 + H_2$
- (D)  $2NO_2 + O_2 \rightleftharpoons 2NO_3$

84. Enzymes have a 3D shape due to which type Of protein structure:

- (A) Primary structure
- (B) Secondary structure
- (C) Tertiary structure
- (D) Quaternary structure

85. The atomic number of scandium is 21. What is its ground state electronic configuration?

- (A)  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3$
- (B)  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^1 4s^2$
- (C)  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4s^2$
- (D)  $1s^2 2s^2 2p^6 3s^2 3p^6 3d^3 4p^1$

86. Quote the wave length range of IR region

- (A) 0.8-2.5  $\mu m$
- (B) 16-1000  $\mu m$
- (C) 2.5-16  $\mu m$
- (D) 400-800  $\mu m$

87. Benzene can be formed from phenol in which of the following reactions?

- (A) Reduction with hydrogen in the presence of Ni
- (B) Reduction with zinc
- (C) Reduction with alkali
- (D) Reduction with acids

88. The compound with an atom, which has unshared pair of electrons is called:

- (A) Nucleophile
- (B) Electrophile
- (C) Protophile
- (D) None of the given options

89. Two rocket fuels below are determined by their high performance.  $N_2H_4(l) + O_2(g) \rightarrow N_2(g) + 2H_2O(l)$   $\Delta H = -632 \text{ kJ}$   
 $H_2(g) + \frac{1}{2} O_2(g) \rightarrow H_2O(l)$   $\Delta H = -286 \text{ kJ}$  If equal masses of hydrazine and hydrogen are used, which of the following has better performance?

- (A) Hydrazine
- (B) Both have equal enthalpy of formation
- (C) Hydrogen gas
- (D) Cannot be compared

90. In anisotropic crystals, which property does not change with the change in direction of crystalline structure?

- (A) Electrical conductance
- (B) Thermal conductance
- (C) Molar mass
- (D) Refractive index

91. Violet color of  $[\text{Ti}(\text{H}_2\text{O})_4]^+$  is due to:

- (A) Central metal ion
- (B) Water molecule
- (C) Complex ion
- (D) Outer anion

92. What product is obtained when methyl magnesium chloride reacts with ammonia?

- (A) Methane
- (B) Methylamine
- (C) Ethylamine
- (D) Methyl chloride

93. The same moles of  $\text{H}_2$ ,  $\text{N}_2$ , and  $\text{O}_2$  are present in 0.1 cc volume at STP. Which one has the greatest number of molecules:

- (A)  $\text{N}_2$
- (B)  $\text{H}_2$
- (C)  $\text{O}_2$
- (D) Number of molecules are equal

94. Which of the following gives a positive test Fehling solution?

- (A) Cu (I) oxide
- (B) Ethanal
- (C) Acetone
- (D) Phenol

95.  $\text{S}_\text{N}1$  reactions mostly result in partial racemization, in partial racemization there is:

- (A) Inversion only
- (B) Retention only
- (C) Equal inversion and retention
- (D) More inversion and retention

96. Dry  $\text{CO}_2$  is passed through grignard reagent in the presence of ether as a solvent. The intermediate is decomposed with diluted HCl giving a compound 'X' identity 'X'.

- (A) Primary alcohol
- (B) Secondary alcohol
- (C) Acetone
- (D) Carboxylic acid

97. A gas at STP contains only  $6.023 \times 10^{23}$  atoms and is monoatomic it will occupy

- (A) 1.2L
- (B) 22.4L
- (C) 30.5L
- (D) 44.8L

98. Lowering in vapour pressure is the highest for:

- (A) 0.2 M urea
- (B) 0.1 M Glucose
- (C) 0.1 M  $\text{MgSO}_4$
- (D) 0.1 M  $\text{BaCl}_2$

99. Chromyl Chloride test is performed to confirm:

- (A) Chloride ions
- (B) Sulfate ions
- (C) Phosphate ions
- (D)  $\text{Cr}^{3+}$  ions

**100. Study the following graphs for the boiling points of some substances: Which of the above graph shows that some members of the graph have hydrogen bonding?**

- (A) I + IV  
(B) II + IV  
(C) III + IV + V  
(D) I + II + III

**101. Which one of the following compounds is an additional polymer?**

- (A) Polyvinyl chloride  
(B) Nylon  
(C) Carbohydrate  
(D) Polyester

**102. The most durable metal plating on iron to protect against corrosion is:**

- (A) Tin plating  
(B) Zinc plating  
(C) Nickel plating  
(D) Copper plating

**103. What happens to the molecule when its atoms are brought closer than the bond length between them?**

- (A) Molecule becomes unstable  
(B) Molecule becomes more stable  
(C) Molecule starts vibrating  
(D) Stability of the molecule remains unchanged.

**104. For endothermic reaction:**

- (A) Forward activation energy < reverse activation energy  
(B) Forward activation energy = reverse activation energy  
(C) Forward activation energy > reverse activation energy  
(D) No change

**105. Which has the lowest temperature?**

- (A) Troposphere  
(B) Stratosphere  
(C) Mesosphere  
(D) Thermosphere

**106. \_ extraction is controlled by partition law.**

- (A) Iodine.  
(B) Benzoic acid.  
(C) Solvent.  
(D) Stationery.

**107. The compound used in borax bead test for the detection of basic radicals to form colored bead is:**

- (A)  $\text{H}_2\text{BO}_2$   
(B)  $(\text{C}_2\text{H}_5)_3\text{BO}_3$   
(C)  $\text{Ca}_2\text{B}_6\text{O}_{11} \cdot 15\text{H}_2\text{O}$   
(D)  $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$

**108. Consider a chemical reaction  $2\text{Cl(g)} \rightarrow \text{Cl}_2\text{(g)}$  The extent of completing this reaction depends upon the magnitude of  $K_c$  and shows that the equilibrium mixture will consist almost of  $\text{Cl}$  molecules when:**

- ☐ A  $K_c$  is very large
- ☐ B  $K_c$  is very small
- ☐ C  $K_c$  is neither very small nor very large
- ☐ D  $K_c$  is equal to 1

**109. Which is NOT true about amino acids?**

- ☐ A They have two functional groups
- ☐ B They show both acidic and basic characteristics
- ☐ C They are the basic units of proteins
- ☐ D They do not exist in solid state

**110. Which of the following pairs has the same electronic structure?**

- ☐ A Ar &  $\text{Cl}^-$
- ☐ B Ca & Ar
- ☐ C Mg and Na
- ☐ D Ag & Sn

**111. Which of the following electronic transitions requires highest amount of energy when a compound is interacted with ultraviolet radiations?**

- ☐ A  $n \rightarrow \pi$
- ☐ B  $\pi \rightarrow \pi$
- ☐ C  $8 \rightarrow 8$
- ☐ D  $n \rightarrow 8$

**112. Which of the following is a secondary alcohol?**

- ☐ A Option A
- ☐ B Option B
- ☐ C Option C
- ☐ D Option D

**113. Propose the types of Isomerism shown by 1-Butanol.**

- ☐ A Chain isomerism & Position isomerism
- ☐ B Chain isomerism & Functional group isomerism
- ☐ C Chain isomerism, Position isomerism & Functional group isomerism
- ☐ D Position isomerism, Functional group isomerism & Metamerism

**114. For all adiabatic processes:**

- ☐ A The entropy of the system does not change
- ☐ B The entropy of the system increases
- ☐ C The entropy of the system decreases
- ☐ D The entropy of the system does not decrease

**115. In a unit cell of a crystal lattice the angle beta is between faces:**

- ☐ A a and b
- ☐ B b and c
- ☐ C c and a
- ☐ D Not specified

**116.** When small amount of ammonia is added to  $\text{CuSO}_4$  solution in water, blue Ppt of  $[\text{Cu}(\text{H}_2\text{O})_4(\text{OH})_2]$  is formed. The blue Ppt dissolves on addition of excess of ammonia. The product formed is:

- (A)  $[\text{Cu}(\text{H}_2\text{O})_2(\text{NH}_3)_2(\text{OH})_2]$  (B)  $[\text{Cu}(\text{NH}_3)_4(\text{OH})_2]$   
(C)  $[\text{Cu}(\text{NH}_3)_4(\text{H}_2\text{O})_2]^{2+}$  (D)  $[\text{Cu}(\text{NH}_3)_3(\text{H}_2\text{O})_3]^{2+}$

**117.** Which one of the following reactions shows the combustion of a saturated hydrocarbon?

- (A)  $\text{C}_2\text{H}_4 + 3\text{O}_2 \rightarrow 2\text{CO}_2 + 2\text{H}_2\text{O}$   
(B)  $\text{CH}_4 + 2\text{O}_2 \rightarrow \text{CO}_2 + 2\text{H}_2\text{O}$   
(C)  $\text{CH}_4 + 12\text{O}_2 = \text{CH}_3\text{OH}$  (conditions: (Conditions: Cu,  $400^\circ\text{C}$ , 200 atm)  
(D)  $\text{C}_2\text{H}_2 + 5/2\text{O}_2 \rightarrow 2\text{CO}_2 + \text{H}_2\text{O}$

**118.** How should the condition be changed to prevent the volume of a given gas from expanding when its mass is increased?

- (A) Temperature is lowered & pressure is increased  
(B) Temperature is increased & pressure is lowered  
(C) Temperature & pressure both are lowered  
(D) Temperature & pressure both are increased

**119.** Why is water added after the reduction process of aldehyde and ketone with  $\text{LiAlH}_4$ ?

- (A) Because water reacts violently with  $\text{LiAlH}_4$   
(B) Because water will protonate  $\text{LiAlH}_4$   
(C) Because water inhibits the process  
(D) Because it will result to alkenes

**120.** Alkyl Halides involving -C-X bond breakage and- C-Nu bond formation simultaneously.

- (A)  $\text{S}_\text{N}1$  (B)  $\text{S}_\text{N}2$   
(C)  $\text{E}1$  (D)  $\text{E}2$

**121.** The hydrolysis of an ester proceeds most slowly under the conditions of:

- (A) high acidity (B) high basicity  
(C) neutrality (D) high temperature

**122.** Which of the following has the same number of molecules as there are in 11g of  $\text{CO}_2$ ?

- (A) 4g of  $\text{O}_2$  (B) 4.5g of  $\text{H}_2\text{O}$   
(C) 4g of  $\text{Cl}_2$  (D) 1 moles of  $\text{NaCl}$

**123.** Which ion is present in the highest concentration in a 2 mole/ $\text{cm}^3$  solution of sodium sulfate?

- (A) The hydrogen ion,  $\text{H}^+$  (B) The hydroxide ion,  $\text{OH}^-$   
(C) The sodium ion,  $\text{Na}^+$  (aq) (D) The sulphate ion,  $\text{SO}_4^{2-}$  (aq).

**124. Sodium hydroxide acts on Aluminum oxide to form:**

- ☐ A  $\text{NaAlO}_3$
- ☐ B  $\text{Na}_3\text{Al}_2\text{O}_6$
- ☐ C  $\text{NaAlO}_2$
- ☐ D  $\text{NaAl}_2\text{O}_3$

**125. Which one of the following has highest boiling point?**

- ☐ A Diethyl ether
- ☐ B Benzene
- ☐ C Carbon disulphide
- ☐ D Carbon tetrachloride

**126. Nylon-6,6 is the polymer of:**

- ☐ A Hexamethylene diamine and Adipic acid
- ☐ B Ethylene glycol and Phthalic acid
- ☐ C Ethylene glycol and Adipic acid
- ☐ D Hexamethylene diamine and Phthalic Acid



## Physics

36 MCQs

**127. If  $A, B = 1/2 AB$  then angle between A and B is**

- ☐ A Zero
- ☐ B 30
- ☐ C 60
- ☐ D 90

**128. The stationary waves can be set up on the string only with the frequencies of harmonic series determined by:**

- ☐ A The tension, length and mass per unit length of the string
- ☐ B The tension and mass per unit length of the string only
- ☐ C The length and mass per unit length of the string only
- ☐ D The tension and length of the string only

**129. In an ideal transformer, the most important function of the soft iron core is:**

- ☐ A To reduce eddy currents
- ☐ B To improve the flux linkage between the primary and secondary coils
- ☐ C To dissipate the heat generated by the two coils
- ☐ D To eliminate the back e.m.f produced in the secondary coils

**130. The number of photoelectrons emitted per second from the metal surface depends upon**

- ☐ A Intensity of light
- ☐ B Frequency of light
- ☐ C Wavelength of light
- ☐ D Speed of light

**131. The net magnetic field created by the electrons within an atom is due to the field created by their \_ motion.**

- ☐ A Orbital
- ☐ B Spin
- ☐ C Orbital & spin
- ☐ D Orbital X spin

**132. The thermodynamic process during which the pressure is kept constant is called**

- (A) Isochoric process
- (B) Adiabatic process
- (C) Isobaric process
- (D) Isothermal process

**133. The ratio of moment of inertia of two objects 'A' and 'B' is 2:3. Which one of the following is the ratio of torques of 'A' and 'B' respectively if both are being rotated with constant angular acceleration?**

- (A) 3:4
- (B) 2:3
- (C) 3:2
- (D) 4:3

**134. A pipe varies uniformly in diameter from 2m to 4m. An incompressible fluid enters the pipe with velocity 16 m/s. What is velocity of fluid when it leaves the pipe?**

- (A) 64 m/s
- (B) 32 m/s
- (C) 8 m/s
- (D) 4 m/s

**135. The energy supplied by the cell to the charge carriers is derived from the conversion of:**

- (A) Heat energy into Electrical energy
- (B) Chemical energy into Electrical energy
- (C) Solar energy into Electrical energy
- (D) Mechanical energy into Electrical energy

**136. The quantity of uranium is 400g, the amount of uranium left after three half-lives is:**

- (A) 12.5 g
- (B) 25 g
- (C) 50 g
- (D) 100 g

**137. Electric field strength at position vector  $r=(4i+3j)m$  caused by point charge  $q=5\mu C$  placed at origin is:**

- (A)  $1440i+1080jV/m$
- (B)  $1240i+1280jN/C$
- (C)  $1440i+1080jN/C$
- (D)  $1240i+1080jN/C$

**138.  $1KWh = \_\_J$ ?**

- (A) 3.6J
- (B) 3.6KJ
- (C) 3.6MJ
- (D) 3.6 GJ

**139. When an Operational amplifier is used as Inverting amplifier, then angle between its output and input signal is:**

- (A) 30 degrees
- (B) 45 degrees
- (C) 60 degrees
- (D) 90 degrees
- (E) 180 degrees

140. An n-type semiconductor is made by doping silicon crystal with ..

- (A) Indium
- (B) Aluminium
- (C) Arsenic
- (D) Both B and C

141. The magnetic flux linked with a solenoid of area 'A', having 'N' turns at right angle to magnetic field is:

- (A) NBA
- (B) BA
- (C)  $\frac{1}{2}$  NBA
- (D)  $BA\cos(\theta)$

142. A body of mass 10 kg is hanging from a spring inside a lift. If the lift falls with an acceleration  $10\text{ms}^{-2}$  then what will be the reading of spring balance:

- (A) Zero
- (B) 2.5 kg
- (C) 5 kg
- (D) 10 kg

143. If  $\hat{n}$  is unit vector in direction of  $\vec{A}$  then:

- (A)  $\hat{n} = \vec{A} / |\vec{A}|$
- (B)  $\hat{n} = (\vec{A} \cdot |\vec{A}|)$
- (C)  $\hat{n} = \hat{n} \vec{A}$
- (D)  $\hat{n} = \vec{A} / A$

144. Two waves of slightly different frequencies and travelling in the same direction lead to:

- (A) Stationary Waves
- (B) Beats
- (C) Interference
- (D) Both B and C

145. A loop of 5 turns of wire is placed in uniform magnetic field of 0.5T, then area of loop shrinks at a constant rate of  $10\text{m}^2/\text{s}$ , the emf induced is:

- (A) 2.5V
- (B) 25V
- (C) 250V
- (D) 0.25V

146. According to de-Broglie equation the smallest wavelength associated with it.

- (A) Alpha particle
- (B) Neutron
- (C) Proton
- (D) Electron

147. The part of the electromagnetic spectrum in which Lyman series lies is:

- (A) Visible region
- (B) Infrared region
- (C) Ultraviolet region
- (D) X-rays

148. For a gas of volume V in its equilibrium state, if the pressure does change with time then total kinetic energy of gas is constant because:

- (A) Collisions between gas molecules occur
- (B) Collisions between gas molecules occur linearly
- (C) Collisions must be elastic
- (D) Collisions must be inelastic

149. One radian is analogous to:

- (A)  $57^{\circ}3'$
- (B)  $57^{\circ}3''$
- (C)  $57^{\circ}18'$
- (D)  $57^{\circ}18''$

150. Conservation of mass of fluid flow leads to:

- (A) Bernoulli's equation
- (B) Venturi meter
- (C) Equation of motion
- (D) Equation of continuity

151. The maximum output power is delivered to a load resistance 'R', when the internal resistance 'r' of the source is equal to:

- (A)  $\infty$
- (B) 0
- (C) R
- (D)  $R/2$

152. The path traced by beta particles in air is:

- (A) Straight
- (B) Erratic
- (C) Circular
- (D) Elliptical

153. If the length, width, and separation between the plates of a parallel plate capacitor are doubled, then its capacitance becomes:

- (A) Double
- (B) Half
- (C) Four-times
- (D) Eight-times

154. An electric motor of power 2hp is installed in an industrial unit. Its power is

- (A) 1500 w
- (B) 742 w
- (C) 148 w
- (D) 1492 w

155. For the production of electromagnetic waves, the charges used are:

- (A) Stationary charges
- (B) Charges moving with uniform speed
- (C) Accelerating charges
- (D) All of the above

156. The net charge on an N-type substance is:

- (A) Neutral (0)
- (B) Positive
- (C) Negative
- (D) Variable

157. A long solenoid has length L and total number of N turns, each of which has a cross-sectional area A, its inductance is:

- (A)  $\mu_0 N^2 A L$
- (B)  $\mu_0 N^2 A / L$
- (C)  $\mu_0 N^2 L / A$
- (D)  $\mu_0 N L / A$

**158. A body in equilibrium must not have:**

- ☐ A Kinetic energy
- ☐ B Velocity
- ☐ C Momentum
- ☐ D Acceleration

**159. If the dot product of two nonzero vectors A and B is zero then the magnitude of their cross product is \_.**

- ☐ A 0
- ☐ B 1
- ☐ C AB
- ☐ D -AB

**160. The colors in the soap bubble are due to:**

- ☐ A Interference
- ☐ B Dispersion of light
- ☐ C Scattering of light
- ☐ D Refraction of light

**161. The efficiency of a transformer which draws a power of 20 watt is 60%, the power supplied by it is:**

- ☐ A 5 W
- ☐ B 1.2 W
- ☐ C 6 W
- ☐ D 12 W

**162. If 50 KV is the applied potential in an X-ray tube then the minimum wavelength of X-rays produced is:**

- ☐ A 0.2 nm
- ☐ B 2 nm
- ☐ C 0.02 nm
- ☐ D 2 Å



## English

9 MCQs

**163. Fill in the blanks with the most appropriate option. We will stay here \_ Monday.**

- ☐ A Until
- ☐ B Till
- ☐ C Still
- ☐ D Since

**164. Read the passage and the following statements below. Then choose the correct option, basing your answer only on the information provided.** Queen Elizabeth II's Platinum Jubilee, celebrating her 70 years on the British throne, was above all a tribute to one of history's great acts of constancy. Her reign spanned virtually the entire post-World War II era, making her a witness to cultural upheavals from the Beatles to Brexit. STATEMENTS: I. There has been another queen of the British throne named Elizabeth before her. II. Brexit is a normal occurrence. III. Elizabeth was Queen of the British during World War II.

- ☐ A I, II and III; all are correct
- ☐ B Only III is correct
- ☐ C Only I is correct
- ☐ D Only I and III are correct

**165. In each of the following question, four alternative meanings of a word are given. You have to select the nearest correct meaning of the given word and fill the appropriate circle on the mcq Response Form. Prodigious**

- |                                    |                                  |
|------------------------------------|----------------------------------|
| <input type="radio"/> A Productive | <input type="radio"/> B Enormous |
| <input type="radio"/> C Prudential | <input type="radio"/> D Waddle   |

**166. In each of the following question, four alternative sentences are given. Choose the CORRECT one and fill the Circle corresponding to that letter in the MCQ Responses Form.**

- ☐ A As she said the computer was programmed by Mona.
- ☐ B Just like she said the computer was programmed by Mona.
- ☐ C As like she said the computer was programmed by Mona.
- ☐ D Just like she had she said the computer was programmed by Mona.

**167. Pick the correct option.**

- ☐ A The supervisor has nor will ever compromise.
- ☐ B The supervisor have nor will ever compromise.
- ☐ C The supervisor has not compromised nor will ever compromise.
- ☐ D The supervisor has nor will ever compromised.

**168. The third person omniscient point of view is the most objective and trustworthy because:**

- ☐ A an all-knowing narrator is telling the story.
- ☐ B the narrator can easily be identified.
- ☐ C the characters appear familiar
- ☐ D the events are in chronological order.

**169. Choose the word opposite in meaning to the capitalized word "ANARCHIC":**

- |                                    |                                   |
|------------------------------------|-----------------------------------|
| <input type="radio"/> A Riotous    | <input type="radio"/> B Turbulent |
| <input type="radio"/> C Disordered | <input type="radio"/> D Organized |

**170. Choose the sentence that is grammatically correct:**

- |                                                    |                                                       |
|----------------------------------------------------|-------------------------------------------------------|
| <input type="radio"/> A He weighed himself maunds. | <input type="radio"/> B He weighed two maunds.        |
| <input type="radio"/> C He weighed themselves two. | <input type="radio"/> D He weighed itself two maunds. |

**171. He prefers death \_ dishonor.**

- |                              |                            |
|------------------------------|----------------------------|
| <input type="radio"/> A Over | <input type="radio"/> B On |
| <input type="radio"/> C Upon | <input type="radio"/> D To |



## Analytical and Logical Reasoning

9 MCQs

**172.** P and Q are M's parents. M and N are siblings. Q is N's mother. What is P to M?

- (A) Mother
- (B) Father
- (C) Sister
- (D) Brother

**173.** UDOMETER is coded as DUMOTERE then how will SUBLEASE be coded?

- (A) USBAELES
- (B) USLBESAE
- (C) USLBAEES
- (D) USLBEAES

**174.** I. The literacy rate in the district has been increasing. II. The district administration has conducted extensive training program for the workers involved in the literacy drive.

- (A) Statement I is the cause and statement II is its effect
- (B) Statement II is the cause and statement I is its effect
- (C) Both the statements I and II are independent causes
- (D) Both the statements I and II are effects of independent cause

**175.** If sum of the two numbers is -9 and their product is -36, then the numbers are:

- (A) 12, -3
- (B) -12, 3
- (C) -12, -3
- (D) 9, -4

**176.** Read the following and choose the correct answer: Drake was wearing a blue shirt with black jeans and brown shoes. John was wearing a red shirt with black jeans and black shoes. Ahmad was wearing black jeans, a blue or red shirt, and shoes that were not black. Who copied Drake?

- (A) Ahmad
- (B) John
- (C) Drake
- (D) Cannot elicit from given information

**177.** First Indo Pakistan war was fought in:

- (A) 1958
- (B) 1965
- (C) 1947
- (D) 1951

**178.** In the following question, a statement is given followed by four inferences. You have to decide which of the given Inferences can definitely be drawn from the given statement. Indicate your answer. Statement: Most dresses in that shop are expensive. Inferences: I. Some dresses in that shop are expensive. II. There are cheap dresses also in that shop. III. Handloom dresses in that shop are cheap. IV. There are no cheap dresses available in that shop.

- (A) Only I follows
- (B) Only II follows
- (C) Only III follows
- (D) Only IV follows
- (E) None follows

**179.** Read the following statement, assuming everything in it to be true. Then decide which of the given suggested courses of action logically follow and are worth pursuing. Statement: "Aalia wants to sleep but cannot due to regular noise in and around her house everyday." Courses of Action: I. Insert good quality noise blockers into her ears. II, Take strong sleeping pills."

- (A) I (B) II  
(C) Both I and II (D) Neither I nor II

**180.** Some bags are pouches. All pouches are cases. No cases are purses. Which of the following conclusions are NECESSARILY TRUE? CONCLUSIONS: I. Some pouches are purses. II. Some bags are cases. III. No bags are purses.

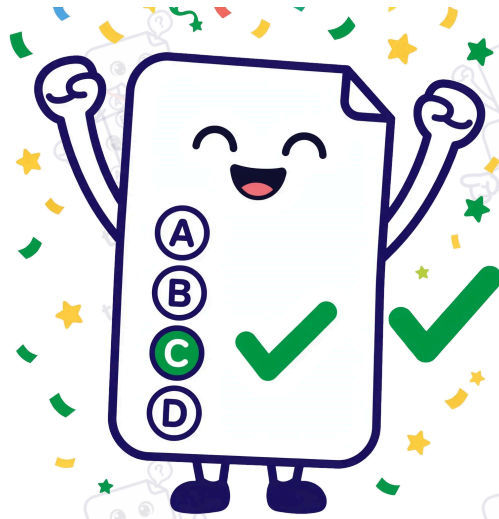
- (A) I and II (B) I and III  
(C) II (D) II and III

## Answer key

Tap any answer to open its full explanation on TestUstad.

### Model Paper 1

|     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |     |   |
|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1   | A | 2   | C | 3   | B | 4   | B | 5   | B | 6   | C | 7   | C | 8   | D | 9   | B | 10  | A |
| 11  | C | 12  | B | 13  | B | 14  | C | 15  | D | 16  | C | 17  | A | 18  | B | 19  | C | 20  | A |
| 21  | A | 22  | A | 23  | B | 24  | D | 25  | D | 26  | A | 27  | C | 28  | B | 29  | B | 30  | B |
| 31  | C | 32  | D | 33  | C | 34  | C | 35  | C | 36  | B | 37  | B | 38  | B | 39  | A | 40  | D |
| 41  | A | 42  | C | 43  | B | 44  | C | 45  | D | 46  | B | 47  | B | 48  | A | 49  | B | 50  | C |
| 51  | A | 52  | B | 53  | D | 54  | A | 55  | D | 56  | C | 57  | C | 58  | D | 59  | D | 60  | A |
| 61  | B | 62  | D | 63  | A | 64  | A | 65  | A | 66  | C | 67  | C | 68  | C | 69  | A | 70  | D |
| 71  | D | 72  | A | 73  | C | 74  | B | 75  | C | 76  | C | 77  | D | 78  | B | 79  | A | 80  | B |
| 81  | B | 82  | C | 83  | C | 84  | C | 85  | B | 86  | B | 87  | B | 88  | A | 89  | C | 90  | C |
| 91  | A | 92  | A | 93  | D | 94  | B | 95  | D | 96  | D | 97  | B | 98  | D | 99  | A | 100 | C |
| 101 | A | 102 | B | 103 | A | 104 | C | 105 | C | 106 | C | 107 | D | 108 | A | 109 | D | 110 | A |
| 111 | D | 112 | A | 113 | C | 114 | D | 115 | C | 116 | C | 117 | B | 118 | A | 119 | A | 120 | B |
| 121 | C | 122 | B | 123 | C | 124 | C | 125 | B | 126 | A | 127 | C | 128 | A | 129 | B | 130 | A |
| 131 | B | 132 | C | 133 | B | 134 | D | 135 | B | 136 | C | 137 | C | 138 | C | 139 | E | 140 | C |
| 141 | A | 142 | A | 143 | A | 144 | B | 145 | B | 146 | A | 147 | C | 148 | C | 149 | C | 150 | D |
| 151 | C | 152 | B | 153 | A | 154 | D | 155 | C | 156 | A | 157 | B | 158 | D | 159 | C | 160 | A |
| 161 | D | 162 | C | 163 | B | 164 | C | 165 | B | 166 | A | 167 | C | 168 | A | 169 | D | 170 | B |
| 171 | D | 172 | B | 173 | C | 174 | B | 175 | B | 176 | A | 177 | C | 178 | B | 179 | A | 180 | C |



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