



# SAMPLE TEST PAPER SCHOLARSHIP CUM ADMISSION TEST

CRACK THE TEST IF YOU ARE THE BEST

Time : 1 Hour 30 Minutess

Class : 10<sup>th</sup> (MEDICAL)

Max. Marks : 180

**CODE - A**

## INSTRUCTIONS

DO NOT BREAK THE SEAL WITHOUT BEING INSTRUCTED TO DO SO BY THE INVIGILATOR

### [A] General :

1. Attempt ALL the questions. Answer have to be marked on the **OMR** sheets
2. This question paper contains **45 questions**.
3. **Section -A** (Q.No. 1 to 15 of Physics) **Section - B** (Q.No. 16 to 30 of Chemistry), **Section-C** (Q.No. 31 to 45 of Biology )
4. Blank spaces are provided at the bottom of each page for rough work. No additional sheets will be provided for rough work.
5. Blank paper, clipboard, log tabes, silde rules, calculators, cellular phones, pagers and electronic gadgets in any form are **NOT** allowed.
6. Do not Tamper / mutilate the **OMR sheet** or this booklet.
7. Do not break the seals of the question-paper booklet before instructed to do so by the invigilator.
8. **SUBMIT** the OMR sheet to the invigilator after completing the test & take away the test paper with you.

### [B] Filling of OMR Sheet :

9. In all the parts, each question will have 4 choices out of which **only one choice is correct**
10. Use only Black/Blue ball point pen for filling the OMR sheet.
11. On the OMR sheet, darken the appropriate bubble for each character of your name, Registration No., Phone No. etc.

### [C] Marking Scheme :

12. For each right answer you will be **awarded 4 marks** if you darken the bubble corresponding to the correct answer and **zero marks** if no bubble is darkened. In case of bubbling of incorrect answer, **minus one (-1)** mark will be awarded.

Name of the Candidate (in Capital letters) : \_\_\_\_\_

Registration Number :

Name of Examination Centre (in Capital letters) : \_\_\_\_\_

Candidate's Signature : \_\_\_\_\_ Invigilator's Signature : \_\_\_\_\_

**SECTION-A (PHYSICS)****(SINGLE CORRECT ANSWER TYPE)**

This section contains **(1-15) multiple choice questions**. Each questions has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

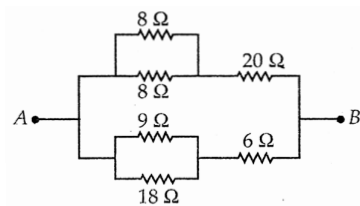
- Q.1 Which of the following instruments works by electromagnetic induction ?
- (A) dynamo (B) moving coil galvanometer
- (C) telephone receiver (D) simple motor
- Q.2 To form an image twice the size of the object, using a convex lens of focal length 20 cm, the object distance must be
- (A)  $< 20$  cm (B)  $> 20$  cm
- (C)  $< 20$  cm and between 20 cm and 40 cm (D) cannot say
- Q.3 A positively charged particle projected towards north is deflected towards downward by a magnetic field. The direction of magnetic field is
- (A) west (B) east
- (C) south (D) upward
- Q.4 A magnetic field
- (A) always exerts a force on a charged particle
- (B) never exerts a force on a charged particle
- (C) exerts a force, if the charged particle is moving across the magnetic field lines
- (D) exerts a force, if the charged particle is moving along the magnetic field lines

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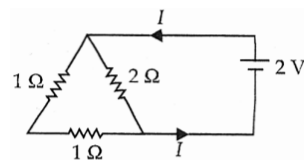
**Space for rough works**

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- Q.5 The number of image formed by two plane mirrors inclined at an angle  $60^\circ$  of an object placed symmetrically between mirrors is
- (A) 5 (B) infinite (C) 6 (D) 7
- Q.6 The equivalent resistance between the points A and B as shown in the figure is



- (A)  $6 \Omega$  (B)  $8 \Omega$  (C)  $16 \Omega$  (D)  $24 \Omega$
- Q.7 A wire of resistance  $R$  is stretched till its radius is half of the original value. Then the resistance of the stretched wire is :
- (A)  $2R$  (B)  $4R$  (C)  $8R$  (D)  $16R$
- Q.8 Near point of normal human eye is
- (A) 25 cm (B) 25 mm (C) 25 m (D) not fixed
- Q.9 What is the current ( $I$ ) in the circuit ?



- (A)  $\frac{1}{2}A$  (B)  $2A$
- (C)  $\frac{3}{2}A$  (D)  $\frac{2}{3}A$

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**Space for rough works**

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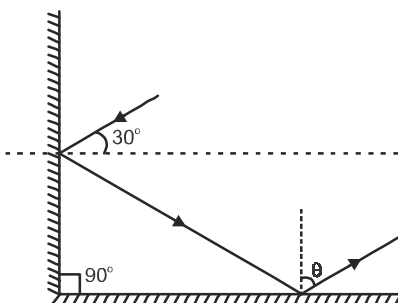
Q.10 Echo is produced due to :

- (A) reflection of sound      (B) resonance      (C) refraction of sound      (D) None of these

Q.11 The S.I. unit of magnetic field intensity is :

- (A) Weber      (B) Tesla      (C) Oersted      (D) Gauss

Q.12 What is the value of  $\theta$  in the following diagram ?



- (A)  $15^\circ$       (B)  $30^\circ$       (C)  $45^\circ$       (D)  $60^\circ$

Q.13 How many electrons constitute current of one micro ampere in one second?

- (A)  $6.25 \times 10^6$       (B)  $6.25 \times 10^{12}$       (C)  $6.25 \times 10^9$       (D)  $6.25 \times 10^{15}$

Q.14 The atmosphere is held to the earth due to :

- (A) Winds      (B) Clouds      (C) Gravity      (D) Rotation of earth

Q.15 The weight of a block in air is 60 N. When it is immersed in water completely its weight is 52 N. Buoyant force on the block is (in Newtons) :

- (A) 52      (B) 60      (C) 8      (D) 112

**Space for rough works**

**SECTION-B (CHEMISTRY)****(SINGLE CORRECT ANSWER TYPE)**

This section contains (16-30) multiple choice questions. Each questions has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

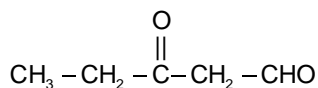
Q.16 The electronic configuration of  $\text{Cu}^{2+}$  ( $Z = 29$ ) ion is

- (A)  $[\text{Ar}] 3d^{10} 4s^0$  (B)  $[\text{Ar}] 3d^{10} 4s^1$  (C)  $[\text{Ar}] 3d^9 4s^0$  (D)  $[\text{Ar}] 3d^7 4s^2$

Q.17  $\text{NH}_4^+$  ion in aqueous solution will behave as

- (A) a base (B) an acid  
(C) both acid and base (D) neutral

Q.18 The functional groups present in followig compound is



- (A) Aldehyde, Carboxylic acid (B) Ketone, Carboxylic acid  
(C) Ketone, Aldehyde (D) Aldehyde only

Q.19 Atomic number of which element is 19 ?

- (A) Mg (B) K (C) Ar (D) Ca

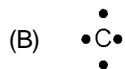
Q.20 Which of the following is a redox reaction ?

- (A)  $\text{CaCO}_3 \longrightarrow \text{CaO} + \text{CO}_2$  (B)  $\text{H}_2 + \text{Cl}_2 \longrightarrow 2\text{HCl}$   
(C)  $\text{CaO} + 2\text{HCl} \longrightarrow \text{CaCl}_2 + \text{H}_2\text{O}$  (D)  $\text{NaOH} + \text{HCl} \longrightarrow \text{NaCl} + \text{H}_2\text{O}$

**Space for rough works**

Q.21 Which element could complete its octet state by forming two covalent bonds ?

(A) Li •



Q.22 Balancing of chemical equation follows

(A) Law of conservation of mass

(B) Law of conservation of energy

(C) Modern periodic law

(D) Mendeleev's periodic law

Q.23 Which of the following is NOT TRUE with respect to the neutralisation reaction ?

(A) Salt is formed

(B) Reaction occurs between an acid and a base

(C) Reactive element displaces less reactive element

(D) Reactants are in gaseous state

Q.24 Process used for the concentration of ore is

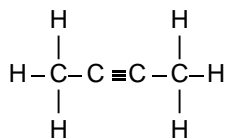
(A) Froth floatation

(B) Electrolysis

(C) Roasting

(D) Bessemerisation

Q.25 Name the following compound :



(A) 1-butane

(B) 2-butene

(C) 2-butyne

(D) 3-butene

**Space for rough works**

- Q.26 Which of the following provides an example of a true solution?
- (A) Blood (B) Milk (C) Starch solution (D) Sugar solution
- Q.27 In the reaction  $2\text{H}_2\text{S} + \text{SO}_2 \longrightarrow 2\text{H}_2\text{O} + 3\text{S}$ , the substance that is oxidized is -
- (A) Hydrogen sulphide (B) Sulphur dioxide (C) Sulphur (D) Water
- Q.28 Which of the following has more electrons than neutrons?
- (A)  $\text{Al}^{3+}$  (B) C (C)  $\text{O}^{2-}$  (D) F
- Q.29 The pH of a solution of hydrochloric acid is 4. The molarity of solution will be -
- (A) 4.0 M (B) .04 M (C)  $10^{-4}$  M (D)  $4 \times 10^{-4}$  M
- Q.30 Ratio of N-14 and N-15 in a sample of nitrogen is 272 : 1. Calculate the average atomic mass of nitrogen.
- (A) 14 (B) 14.5 (C) 15 (D) 15.2

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**Space for rough works**

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**SECTION-C (BIOLOGY)****(SINGLE CORRECT ANSWER TYPE)**

This section contains (31-45) multiple choice questions. Each questions has four choices (A), (B), (C) and (D) out of which **ONLY ONE** is correct.

Q.31 Select the alternative giving correct identification and function of the organelle 'A' in the diagram.



- (A) Endoplasmic reticulum-synthesis of lipids
- (B) Mitochondria - produce cellular energy in the form of ATP
- (C) Golgi body - packaging of material
- (D) Lysosomes - secrete hydrolytic enzymes

Q.32 Part of the respiratory system where gaseous exchange takes place is

- (A) The parts starting from external nostrils upto terminal bronchioles
- (B) Alveoli and their ducts
- (C) All bronchi and terminal bronchioles
- (D) All bronchioles




Q.33 Which of the following is an effect of HIV on the human body ?

- (A) It reduces the number of erythrocytes in the blood
- (B) It reduces the number of platelets in the blood
- (C) It increases the amount of plasma in the blood
- (D) It reduces the number of lymphocytes in the blood

**Space for rough works**



Q.34 Given is a table describing the social organization of Honey bees. Which of the following is a correct match of the description of honey bees ?

	Types of Honey Bees	Description
I	 Drone	Female honey bees which prepare honey.
II	 Queen	Fertile female which lays eggs.
III	 Worker	Sterile males which look after the young ones, collect nectar and pollen.

(A) I and II are correct

(B) I and III are correct

(C) Only II is correct

(D) II and III are correct

**Space for rough works**

- Q.35 Two test tubes are filled with a solution of bromothymol blue. A student exhales through a straw into each tube, and the bromothymol blue turns yellow. An aquatic green plant is placed in each tube, and the tubes are corked. One tube is placed in the dark, and the other tube is placed in direct sunlight. The yellow solution in the tube in sunlight turns blue, while the one in the dark remains yellow. Which statement best explains why the solution in the tube placed in sunlight returns to a blue colour ?
- (A) Oxygen was produced by photosynthesis. (B) Oxygen was removed by respiration.  
 (C) Carbon dioxide was removed by photosynthesis. (D) Carbon dioxide was produced by respiration.
- Q.36 The principal nitrogenous excretory compound in humans is synthesized
- (A) in liver but eliminated mostly through kidneys.  
 (B) in kidneys but eliminated mostly through liver.  
 (C) in kidneys as well as eliminated by kidneys.  
 (D) in liver and also eliminated by the same through bile.
- Q.37 Given below are certain features.
- X. One produces spores, whereas the other produces seeds.  
 Y. One is photosynthetic, whereas the other is saprophytic.  
 Z. One contains xylem and phloem, whereas the other does not.
- Find the pair of two divisions that can represent X, Y and Z respectively
- A. Monocot and dicot B. Algae and fungi  
 C. Ferns and mosses D. Ferns and gymnosperms  
 E. Gymnosperms and angiosperms
- (A) X = A, Y = B and Z = D (B) X = D, Y = B and Z = C  
 (C) X = E, Y = D and Z = C (D) X = B, Y = E and Z = A

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**Space for rough works**

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- Q.38 The anterior pituitary gland facilitates growth of an individual by release of the human growth hormone (HGH) which in turn is regulated by two hormones namely growth hormone releasing hormone (GHRH) and growth hormone inhibiting hormone (GHIH). Imbalance of these hormones could result in gigantism (an individual gains excessive height), dwarfism (a short statured individual) or acromegaly (thickening of limbs, fingers and toes). Interpret the data given below and select the appropriate statement :

Individual	Age group	Hormones
1	2 - 5 yrs.	Excessive GHRH
2	2 - 5 yrs.	Normal GHRH
3	30 - 35 yrs.	Excessive GHRH
4	30 - 35 yrs.	Excessive GHIH
5	2 - 5 yrs.	Excessive GHIH

- (A) 1 and 3 will lead to gigantism while 4 and 5 will show dwarfism  
 (B) 3 will show gigantism, 1 will show acromegaly and 4 and 5 will show dwarfism  
 (C) 2, 3 and 4 will show normal growth  
 (D) 1 will show gigantism, 3 will show acromegaly and 5 will show dwarfism
- Q.39 Which one of the following organs is NOT associated with the alimentary canal?

- (A) Liver (B) Gall bladder (C) Diaphragm (D) Colon

**Space for rough works**

Q.40 Compare the movement of substances in xylem and phloem tissues.

Feature	Xylem	Phloem
Material transported	Water and minerals	I
Process of movement	II	Translocation
Name of relevant theory	III, IV	Mass flow theory

Replace I, II, III and IV with the appropriate words.

- (A) I - sucrose, II-ascent of sap, III - root pressure theory, IV-guttation  
 (B) I - starch, II - ascent of sap, III - guttation, IV - transpiration pull  
 (C) I - sucrose, II-ascent of sap, III-root pressure theory, IV - transpiration pull  
 (D) I - glucose, II - pressure flow hypothesis, III - root pressure theory, IV - adhesion cohesion theory

Q.41 In man thickest skin is found is

- (A) palm (B) Ear (C) Sole (D) Thumb

Q.42 The oxygen evolved in photosynthesis comes from

- (A) CO<sub>2</sub> (B) Water (C) Temperature (D) All of these

Q.43 Vermicomposting involves

- (A) earthworm (B) cockroach (C) leech (D) roundworm

**Space for rough works**

Q.44 Which of the following disease is viral disease

- (A) Tuberculosis (B) Polio (C) Diphtheria (D) Syphilis

Q.45 The value of diastolic blood pressure is

- (A) 120 mm Hg (B) 80 mm Hg (C) 120/80 mm Hg (D) 40 mm Hg

**Space for rough works**