PACE - IIT & MEDICAL

Delhi/ Ghaziabad /Mumbai/ Pune / Goa/ Akola/ Nashik/ Kolkata / Lucknow / Bokaro/ Dubai

Admission cum Scholarship Test for SUPER-50

Standard: 10th (Med.)

Set - 1

DURATION: 1 HOUR

TOTAL MARKS: 120

INSTRUCTIONS: {Paper consists of the following sections}

Section - I : Physics : Q. No. **01** to **10**
Section - II : Chemistry : Q. No. **11** to **20**
Section - III : Biology : Q. No. **21** to **30**

1. This booklet is your question paper. Answers have to be marked on the provided OMR sheet.
2. Space for rough work is provided in the question paper.
3. Log tables, Slide rule, Calculators, Cellular phones and other Electronic devices in any form are NOT allowed in the examination hall.
4. If a student is caught copying, he / she will not be allowed to write the exam.
5. On the OMR sheet, write your name, roll number, mobile number, paper code and put your signature in the appropriate boxes.
6. There are total 30 questions in this paper. Only one choice is correct. Each question carries **+4** for correct answer & **0** for wrong answer.

NOTE: THE RESULT WILL BE ANNOUNCED ON 5TH OCTOBER 2025 AT PACE RDC CENTRE

PHYSICS

1. A concave mirror gives virtual, erect and enlarged image of the object when object kept:
(a) At infinity (b) Between F and C
(c) Between P and F (d) At E

2. Focal length of a plane mirror is
(a) 0 (b) infinite (c) 25 cm (d) –25 cm

3. The muscles of the iris control the
(a) Optic nerve (b) Shape of the crystalline lens
(c) Focal length of the eye-lens (d) Size of the pupil

4. Image formed by plane mirror is
(a) Real and erect (b) Real and inverted
(c) Virtual and erect (d) Virtual and inverted

5. Near and far points of a young person's normal eye respectively are
(a) 0 and infinity (b) 0 and 25 cm
(c) 25 cm and infinity (d) 25 cm and 150 cm

6. The splitting of white light into different colours on passing through a prism is called
(a) Reflection (b) Refraction (c) Dispersion (d) Deviation

7. If radius of curvature of concave mirror is 15 cm then it's focal length will be
(a) 7 cm (b) 30 cm (c) 7.5 cm (d) –7.5 cm

8. When white light enters a glass prism from air, the angle of deviation is least for
(a) Blue light (b) Yellow light (c) Violet light (d) Red light

9. The deflection of light by minute particles and molecules of the atmosphere in all directions is called _____ of light.
(a) Dispersion (b) Scattering (c) Interference (d) Tyndall effect

SPACE FOR ROUGH WORK

10. Which of the following statement is correct according to the laws of reflection?
(a) Angle of incidence is equal to the angle of reflection.
(b) Difference between the angle of incidence and the angle of reflection is 90 degrees.
(c) The beams of incident light after reflection diverge at unequal angles.
(d) The incident ray, the normal and the reflected ray lie in perpendicular planes.

CHEMISTRY

11. Which of the following compound is used by doctors for supporting fractured bones
(a) Plaster of Paris (b) Bleaching Powder
(c) Sodium Hydrogen Carbonate (d) None of these

12. Toothpaste is
(a) Acidic in nature (b) Basic in nature
(c) Neutral in nature (d) None of these

13. What does an acid give when they react with metal hydrogen carbonate?
(a) CO_2 (b) H_2O (c) Salt (d) All of above

14. Sodium carbonate is a basic salt because it is a salt of:
(a) Strong acid and strong base (b) Weak acid and weak base
(c) Strong acid and weak base (d) Weak acid and strong base

15. If pH value of a solution is 7 then the solution is
(a) Acidic (b) Basic (c) Neutral (d) None of these

16. $MnO_2 + 4HCl \rightarrow MnCl_2 + 2H_2O + Cl_2$
Identify the substance oxidized in the above equation.
(a) $MnCl_2$ (b) HCl (c) H_2O (d) MnO_2

17. Which of the following is not a balanced equation?
(a) $Ca(OH)_2 + CO_2 \rightarrow CaCO_3 + H_2O$
(b) $Fe + CuSO_4 \rightarrow FeSO_4 + Cu$
(c) $KClO_4 \xrightarrow{\Delta} KCl + 2O_2$
(d) $Cu + 2HNO_3 \rightarrow Cu(NO_3)_2 + 2NO_2 + H_2O$

SPACE FOR ROUGH WORK

18. A substance added to food containing fats and oils to prevent oxidation is called:
(a) Oxidant (b) Rancid (c) Coolant (d) Antioxidant

19. Which of the following reactions is used in black and white photography?
(a) Combination Reaction (b) Decomposition Reaction
(c) Displacement Reaction (d) Oxidation Reaction

20. What type of chemical reactions take place when electricity is passed through water?
(a) Displacement (b) Combination
(c) Decomposition (d) Double displacement

BIOLOGY

21. Two of the following organisms have a holozoic mode of nutrition. These organisms are:
(a) *Amoeba* and *Mushroom* (b) *Plasmodium* and yeast
(c) *Amoeba* and *Paramecium* (d) *Paramecium* and fleas

22. Consider the following statements about small intestine and select the one which is **not correct**:
(a) The length of the small intestine in animals differs as it depends on the type of food they eat.
(b) The small intestine is the site of complete digestion of food.
(c) The small intestine receives secretions from liver and pancreas.
(d) The villi of the small intestine absorb water from the unabsorbed food before it gets removed from the body via the anus.

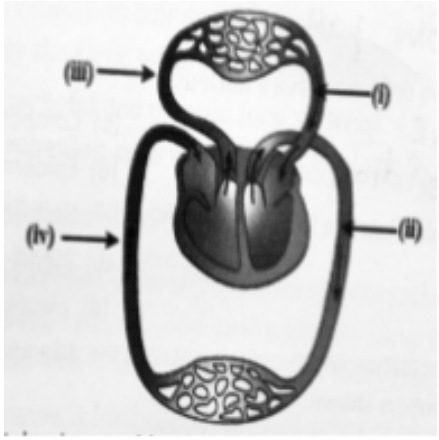
23. Which of the following is not produced during aerobic respiration in Amoeba?
(a) C_2H_5OH (b) H_2O (c) CO_2 (d) ATP

24. Which one of the following pairs does not have a nucleus?
(a) Sieve tube & RBC (b) Companion cell & sieve tube
(c) Guard cell & subsidiary cell (d) Epidermal cell & cortex

25. The blood leaving the tissues becomes rich in:
(a) Carbon dioxide (b) Water (c) Haemoglobin (d) Oxygen

SPACE FOR ROUGH WORK

26. The figure given below shows schematic plan of blood circulation in humans with labels (i) to (iv).



Identify the correct label with its functions:
(a) (i) Pulmonary vein – takes impure blood from body part.
(b) (ii) Pulmonary artery – takes blood from lungs to heart.
(c) (iii) Aorta – takes blood from heart to body parts.
(d) (iv) Vena cava – takes blood from body parts to right auricle.

27. The wave of expansion of an artery when blood is forced into it is called:
(a) Flow (b) Heartbeat (c) Pulse (d) Ticking

28. The artificial process of filtration in place of kidneys is called:
(a) Artificial kidney (b) Haemodialysis
(c) Artificial filtration (d) None of these

29. Loop of Henle plays the role of:
(a) Secretion (b) Reabsorption
(c) Ultrafiltration (d) Excretion

30. Which part of alimentary canal receives bile from the liver?
(a) Stomach (b) Small intestine
(c) Large intestine (d) Oesophagus

SPACE FOR ROUGH WORK