

School Integrated Program

Class – X

SAMPLE PAPER

INSTRUCTIONS

[Time: 3 Hours]

[Max Marks: 450]

A. General:

1. *This booklet is your Question Paper containing 150 questions.*
2. *Blank Papers, Clipboards, Log Tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.*
3. *The answer sheet, a machine-readable optical mark recognition sheet (OMR Sheet), is provided separately.*
4. *DO NOT TAMPER WITH / MULTIPLE THE OMR OR THE BOOKLET.*
5. *Please fill your roll number correctly in the OMR sheet (answer sheet).*
6. *Both Question Paper and OMR Answer Sheet will be submitted after completion of this examination.*

B. Question Paper Format:

1. *The Question Paper consists of five parts (Part I: MAT, Part II: Physics, Part III: Chemistry, Part IV: Mathematics).*
2. *Each Question carries +3 marks for correct answer and -1 mark for incorrect answer.*

Note

- A. *Instructions mentioned on this page are of actual test. It has no reference with the questions / pattern of this paper.*
- B. *This paper is provided just to share the pattern, format and level of questions that could be a part of actual test.*

MAT

Choose the correct answer

- If cook is called butler, butler is called manager, manager is called teacher, teacher is called clerk and clerk is called principal, who will teach in a class?
(A) Clerk (B) Butler (C) Manager (D) Teacher
- Introducing a man, a woman said, 'He is the only son of my mother's mother.' How is the woman related to the man?
(A) Mother (B) Aunt (C) Sister (D) Niece
- Nisha was born on 30 January. Reshma is older than Nisha by 21 days. During that year, the Republic day was celebrated on Wednesday. On which day was Reshma born?
(A) Sunday (B) Monday (C) Tuesday (D) Friday

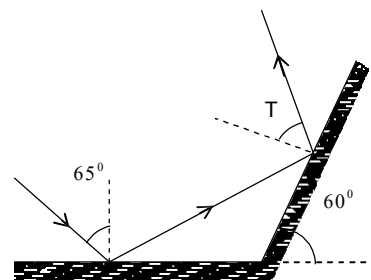
Choose the correct alternative which should be filled in the blank from 17-22

- $01 : 08 = \text{_____} : 64$
(A) 09 (B) 16 (C) 36 (D) 49
- If in a certain language P R O S E is coded as P P O Q E, how is ' L I G H T' coded in that code?
(A) LIGHT (B) LLGFE (C) JIEHR (D) LGGFT
- | | | |
|----|----|----|
| 62 | 35 | 27 |
| 47 | 29 | ? |
| 50 | 38 | 12 |

(A) 27 (B) 13 (C) 20 (D) 18
- Z, X, V, T, R, (?), (?)
(A) O, K (B) N, M (C) K, S (D) P, N
- $\frac{?}{?} ab a \frac{?}{?} ba \frac{?}{?} a$
(A) abbba (B) abbab (C) baabb (D) bbaba

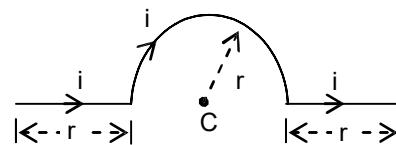
PHYSICS

- For the situation shown in figure, the value of T is
(A) 65° (B) 60°
(C) 55° (D) 50°



- A 2 cm high object is placed at a distance of 15 cm in front of a convex mirror having focal length 5 cm. The image is at a distance of from the mirror.
(A) 2.25 cm (B) 3.75 cm (C) 4 cm (D) 4.75 cm
- For a real extended object the image formed by a concave mirror can be
(A) real (B) virtual (C) erect (D) All of these

12. A long wire having a semi-circular loop of radius r carries a current I as shown in figure. The magnetic induction at the centre C due to the entire wire is:



- (A) $\frac{3\mu_0 I}{4r}$ (B) $\frac{\mu_0 I}{2r}$
 (C) $\frac{\mu_0 I}{4r}$ (D) $\frac{\mu_0 I}{8r}$

13. A wire of length l meters carrying a current i amperes is bent in the form of a circle. The magnitude of the magnetic moment is:

- (A) $\frac{li}{2S}$ (B) $\frac{li^2}{4S}$ (C) $\frac{l^2 i}{2S}$ (D) $\frac{l^2 i}{4S}$

14. Match the two columns and select the correct option from codes given below.

Column I

Column II

(A) Electromagnet

(i) Volt

(B) Electric Iron

(ii) Solenoid

(C) Potential Difference

(iii) Joule heating

(A)-(A)-(i), (B)-(iii), (C)-(ii)

(B)

(A)-(ii), (B)-(i), (C)-(iii)

(C)-(A)-(ii), (B)-(iii), (C)-(i)

(D)

(A)-(i), (B)-(ii), (C)-(iii)

15. If two bulbs rated 2.5 W-110 V and 100 W-110 V are connected in series to a 220 V supply, then

(A) 2.5 W bulb will fuse

(B) 100 W bulb will fuse

(C) Both will fuse

(D) None will fuse

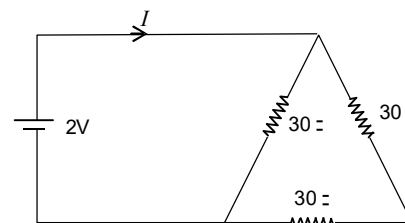
16. The current I in the circuit shown is

(A) $\frac{1}{45} A$

(B) $\frac{1}{15} A$

(C) $\frac{1}{10} A$

(D) $\frac{1}{5} A$



CHEMISTRY

17. How many grams of $NaOH$ should be dissolved in one litre of the solution to prepare solution with $pH = 11$?

(A) 4

(B) 0.4

(C) 0.004

(D) 0.04

18. What is the nature of washing soda in water?

(A) Acidic

(B) Alkaline

(C) Neutral

19. Amphoteric S_1 : Both bases and alkalies are soluble in water.

S_2 : Alkalies are soluble in water but all bases are not.

S_3 : Bases are soluble in water but all alkalies are not

S_4 : C_2H_5OH is a base because it has a OH group

(A) S_1 and S_4 are correct

(B) S_1 and S_2 are correct

(C) S_2 is correct

(D) S_3 is correct and S_4 is correct

20. Brass is the alloy of

(A) Cu & Sn

(B) Cu & Zn

(C) Zn & Sn

(D) Cu & Ni

21. The correct order of electrical conductivity is

(A) $Al > Au > Cu > Ag$

(B) $Cu > Ag > Al > Au$

(C) $Au > Ag > Al > Cu$

(D) $Ag > Cu > Au > Al$

22. Which of the following reaction is not correctly balanced?
 (A) $Cu + 2Ag \rightleftharpoons Cu^{2+} + 2Ag$ (B) $Zn + Cu^{2+} \rightleftharpoons Zn^{2+} + Cu$
 (C) $Al + 2H^+ \rightleftharpoons Al^{3+} + 2H_2$ (D) $Br_2 + 2I^- \rightleftharpoons 2Br^- + I_2$
23. Choose the correct option for p, q, r and s: $pC_6H_{12}O_6(s) + qO_2(g) \rightleftharpoons rCO_2(g) + sH_2O(l) + Heat$
 (A) 1, 2, 2, 4 (B) 2, 2, 4, 6 (C) 4, 2, 2, 6 (D) 1, 6, 6, 6
24. Oxide of one metal protects its own layer. Name the metal?
 (A) Copper (B) Silver (C) Iron (D) Aluminium

MATHEMATICS

25. $6(\sin^6 T + \cos^6 T) - 9(\sin^4 T + \cos^4 T)$ is equal to
 (A) 1 (B) -1 (C) 3 (D) -3
26. The value of $\cos 15^\circ$ is
 (A) $\frac{\sqrt{3}-1}{2\sqrt{2}}$ (B) $\frac{\sqrt{3}+1}{2\sqrt{2}}$ (C) $\frac{\sqrt{3}}{2\sqrt{2}}$ (D) none of these
27. The inradius of triangle if its area is 30 cm^2 and hypotenuse is 13 cm
 (A) 1 cm (B) 2 cm (C) 2.5 cm (D) $2\sqrt{2}$ cm
28. The area of a regular octagon with each side 'a' cm is:
 (A) $2a^2 + \sqrt{2}a^2$ (B) $\sqrt{2}a^2 + a^2$ (C) $a^2 + \sqrt{2}a^2$ (D) None of these
29. $\frac{a^2 b^2 c^2}{a^3 b^3 c^3}$ can be simplified to
 (A) $\frac{a}{b^2 c^2}$ (B) $\frac{a}{b^2 c}$
 (C) $\frac{a}{b c^2}$ (D) $\frac{a}{b c}$
30. Five tables and eight chairs cost Rs. 7,350. Three tables and five chairs cost Rs. 4,475. The price of a table is
 (A) Rs. 950 (B) Rs. 325 (C) Rs. 925 (D) Rs. 350
31. If $P(A) = 0.65$, $P(B) = 0.65$ where A and B are mutually exclusive events. Then find $P(A \cup B)$
 (A) 0.60 (B) 0.30 (C) 0.70 (D) None of these
32. If both roots of the equation $ax^2 + bx + c = 0$ are imaginary and $c \neq 1$, then
 (A) $3a \neq 2 - 4c$ (B) $3a = 2 - 4c$ (C) $c = a$ (D) none of these