

B



SCSS-ST-24 PCM Group

Question Booklet Sr. No.

220940

Exam Date : 07/04/2024

Time : 02.30 pm to 05.00 pm

Max. Marks : 400

Important Instructions :

1. Immediately fill the particulars on this page of The Booklet as well as Answer-sheet with Black or Blue Ball Pen. *Use of Pencil is strictly prohibited.*
2. Do not open this Test Booklet until you are asked to do so.
3. This Test Booklet contains four sections A, B, C & D.
4. The Section-A contains 25 questions of **Physics**.
5. The Section-B contains 25 questions of **Chemistry**.
6. The Section-C contains 25 questions of **Mathematics**
7. The Section-D contains 25 questions of **Basic Mathematics & Mental ability**.
8. This Test Booklet contains 100 questions.
9. There are **four** choices for every question out of which only one choice is most correct (MCQ). Dark the appropriate circle on the OMR Answer-sheet with Blue/Blak Ball pen.
10. Each question carries 4 marks. There is negative marking system. For each wrong answer **1 mark will be deducted from obtained marks.**
11. Filling up more than one responses in any question will be treated as wrong response and marks for this will be deducted according to negative system.
12. No candidates is allowed to carry any printed or written textual material, bits of paper, cell phone and any other electronic devices.
13. Rough work is to be done on the space provided in the Test Booklet only.
14. On completion of the test, the candidate must hand over the Answer-sheet to the Invigilator on duty. *However, candidates are allowed to take away this Question paper with them.*
15. **Do not fold or make any stray marks on the Answer-sheet.**

Name of Candidate (In capital letters) : _____

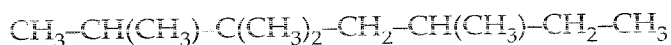
Seat No. : In figures

--	--	--	--	--	--	--	--

26. The conversion of wood into coal is known as
- 1) Catenation
 - 2) Catalysis
 - 3) Carbonisation
 - 4) Pyrolysis
27. Match the following Column-I with Column-II and select the most appropriate option given below:

Column-I	Column-II
A) Natural fibre	i) Terylene
B) Synthetic fibre	ii) Raincoats
C) Semisynthetic fibre	iii) Silk
D) Rubber	iv) Terycott

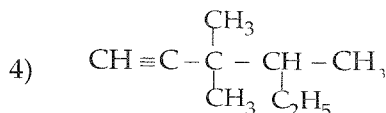
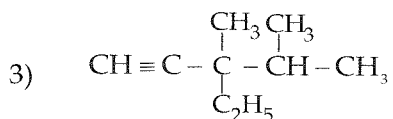
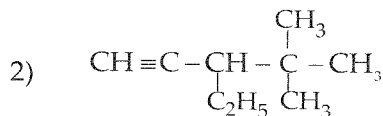
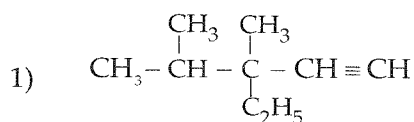
- 1) A-iii; B-i; C-iv; D-ii
 - 2) A-ii; B-i; C-iv; D-iii
 - 3) A-iii; B-ii; C-i; D-iv
 - 4) A-iv; B-i; C-ii; D-iii
28. The compound which forms the strongest hydrogen bond is?
- 1) $\text{CH}_3\text{CH}_2\text{OH}$
 - 2) $\text{C}_2\text{H}_5\text{NH}_2$
 - 3) $\text{C}_6\text{H}_5\text{OH}$
 - 4) CH_3COOH
29. When ethyl chloride and alcoholic KOH are heated, the compound obtained is
- 1) C_2H_4
 - 2) C_6H_6
 - 3) C_2H_2
 - 4) C_2H_6
30. How many primary, secondary, tertiary and quaternary carbons are present in the following hydrocarbon?



	Primary	Secondary	Tertiary	Quaternary
1)	6	2	2	1
2)	2	6	3	0
3)	2	4	3	2
4)	2	2	4	3

Space for rough work

31. Correct structure of 3-ethyl-3,4-dimethylpent-1-yne is



32. Classify the following compounds and select the correct pair.

A) Acetic anhydride

B) Methyl acetate

C) Diethyl ether

D) Acetyl chloride

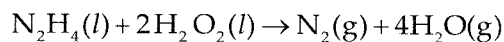
1) Acetic anhydride - Ester

2) Methyl acetate - Ether

3) Diethyl ether - Acid anhydride

4) Acetyl chloride - Acid halide

33. Some rocket engines use a mixture of hydrazine N_2H_4 and hydrogen peroxide, H_2O_2 as propellant. The reaction is given by following equation



How much of the excess reactant, remains unchanged when 0.750 mol of N_2H_4 is mixed with 17g of H_2O_2 ?

1) 16g N_2H_4

2) 0.25 mol H_2O_2

3) 0.25 mol N_2H_4

4) 8.5 g N_2O_2

34. If three gases X, Y and Z are arranged in increasing order of their relative molecular mass and the mass of each gas is 10g at STP state, which gas will contain least number of molecules and which will contain the most?

1) X least and Y maximum

2) X maximum and Z least

3) Y maximum and Z least

4) Y least and Z maximum

35. The ratio of rates of diffusion two gases (X) and (Y) is $4 : \sqrt{11}$. If molecular mass of (Y) is double to the molecular mass of oxygen, then (X) is

1) CO

2) SO_3

3) CO_2

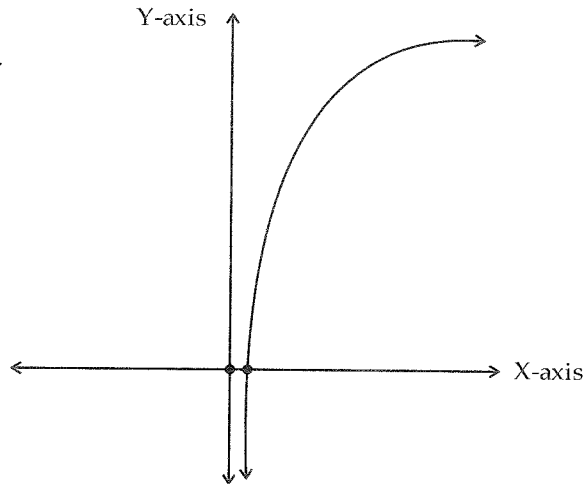
4) NO

Space for rough work

49. If 18 g of glucose ($C_6H_{12}O_6$) is present in 1000g of an aqueous solution of glucose is said to be
- | | |
|--------------|--------------|
| 1) 1 molal | 2) 1.1 molal |
| 3) 0.5 molal | 4) 0.1 molal |
50. The maximum number of electrons can be accommodated in third shell ($n = 3$) is
- | | |
|-------|-------|
| 1) 2 | 2) 8 |
| 3) 18 | 4) 10 |

Space for rough work

51. The below graph represents



- 1) $y = a^x, 0 < a < 1$ 2) $y = \log_a x, a > 1$
 3) $y = a^x, a > 1$ 4) $y = \log_a x, 0 < a < 1$

52. If $\log_a ab = x$ then the value of $\log_b ab$ is

- 1) $\frac{x-1}{x}$ 2) $\frac{x}{x-1}$
 3) $\frac{x}{x+1}$ 4) $\frac{x+1}{x}$

53. Vishnu sells a bike at a profit of 5% for Rs. 10,500. If he decreases the selling price to Rs. 9000 then will he gain or lose and by how much percentage?

- 1) Gain, 15% 2) Loss, 10%
 3) Loss, 15% 4) Gain, 10%

54.

x	2	4	6	8
f	3	5	6	y

The mean of above data is 5.5. Find the missing frequencies in the above distribution

- 1) 6 2) 4
 3) 3 4) 2

Space for rough work

66. If $\frac{S_m}{S_n} = \frac{m^2}{n^2}$, where S_m and S_n are sum of first m and n terms of an A.P. respectively and $m \neq n$ then,

$\frac{a_5}{a_{11}}$ is, where a_1, a_2, a_3, \dots , are terms of A.P.

1) $\frac{11}{41}$

2) $\frac{3}{7}$

3) $\frac{9}{11}$

4) $\frac{83}{121}$

67. If $\frac{x}{a} = \frac{y}{b} = \frac{z}{c} = \lambda$ then value of $\left(\frac{3x^3 - 11y^3 + 13z^3}{3a^3 - 11b^3 + 13c^3}\right)^{-\frac{1}{3}} =$

1) λ

2) λ^{-1}

3) $-\lambda^{-1}$

4) $-\lambda$

68. $\left(\frac{1}{a^{x-y} + 1} + \frac{1}{a^{y-x} + 1}\right)^{-2025} =$

1) 1

2) -1

3) 2025

4) -2025

69. The sum of cube of first 'n' natural number is given by $\left(\frac{n(n+1)}{2}\right)^2$.

$\left[\text{i.e. } 1^3 + 2^3 + 3^3 + 4^3 + \dots + n^3 = \left(\frac{n(n+1)}{2}\right)^2 \right]$ using this result find $9^3 + 10^3 + 11^3 + 12^3 + \dots + 19^3$

1) 34064

2) 38426

3) 36086

4) 34804

70. The graphs of $x^2 = 4y$ and $y = mx + c$ intersect at two points (2, 1) and (6, 9) find the quadratic equation

in x whose roots are $(m + 1)$ and $\left(4 + \frac{2c}{3}\right)$


1) $x^2 - 11x - 126 = 0$

2) $x^2 - 9x + 18 = 0$

3) $x^2 + 5x + 6 = 0$

4) None

Space for rough work

 <p style="text-align: center;">SHIV CHHATRAPATI SHIKSHAN SANSTHA, LATUR RAJARSHI SHAHU MAHAVIDYALAYA, LATUR SHAHU SCREENING TEST - 2024 IMPORTANT DATES</p>	
SCREENING TEST - 2024 (OFFLINE MODE ONLY) DATE : 07 April 2024	PCB GROUP - 10-00 AM TO 12-00 PM
	PCM GROUP - 02-30 PM TO 05-00 PM
Online Display of Provisional Answer Key	07-Apr-2024 : After 07-00 PM
Objections on Provisional Answer Key	08-Apr-2024 : UPTO 05-00 PM
Online Declaration - 1. Final Answer Key, 2. Copy of Candidate OMR Sheet, 3. Result of SCREENING TEST -2024 (Individual Login)	12-Apr-2024 : After 02-00 PM
Parent Meeting of Selected Candidate (PCB GROUP)	13-Apr-2024 : 11-00 AM
Parent Meeting of Selected Candidate (PCM GROUP)	14-Apr-2024 : 11-00 AM
Admissions :- First Selected List	13 to 16 April 2024
Admissions : Second Selected List (In case of vacancy only)	18 to 20 April 2024
Date of Commencement of Classes will be declared in parent meeting	

वरील तारखांमध्ये काही बदल झाल्यास वेबसाईट वर सूचना दिली जाईल.