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DIVISION: PRE-MEDICAL
Academic session: 2023-24

PERIODIC ASSESSMENT TEST (PAT)

STUDENT SUPPORT BOOKLET (SSB)

Answer Key (AK) | Standard Hints (SH) | Text Solutions (TS) | Weightage Sheet (WS)

CLASS	XIII	COURSE NAME	SAMPOORN	COURSE CODE	MD
PHASE CODE(S)	03MD	TOTAL PAGES	1	BATCH CODE(S)	03MD

Target Examination & Year:

NEET 2025

TEST PATTERN	TEST TYPE	TEST CODE & SEQUENCE
NEET	CUMULATIVE TEST	CT-4

DATE & DAY:
22th October 2023 | Sunday

Duration & Time:
200 Minutes | 11:30 AM to 02:50 PM

Contents:

- Weightage Sheet (WS) ✓
- Answer Key (AK) ✓
- Standard Hints (SH)
- Text Solutions (TS) ✓
- Resonance Student's Critical Analysis of Learning for Excellence (ResoSCALE)
- Student Self Assessment Sheet (SAS)
- Video Solutions (VS)

Scan QR Code for Video Solutions → Coming Soon

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APPLY ONLINE

ANSWER KEY (AK)

PAPER											
PART-A : CHEMISTRY	Q.No.	1	2	3	4	5	6	7	8	9	10
	Ans.	1	2	4	1	3	4	1	1	2	4
	Q.No.	11	12	13	14	15	16	17	18	19	20
	Ans.	2	1	1	3	1	2	1	1	4	4
	Q.No.	21	22	23	24	25	26	27	28	29	30
	Ans.	2	3	3	4	4	2	4	4	3	4
	Q.No.	31	32	33	34	35	36	37	38	39	40
	Ans.	2	2	3	3	1	4	4	1	4	4
	Q.No.	41	42	43	44	45	46	47	48	49	50
	Ans.	2	3	4	1	1	2	2	3	3	3
PART-B : PHYSICS	Q.No.	51	52	53	54	55	56	57	58	59	60
	Ans.	4	2	2	3	4	4	4	2	3	3
	Q.No.	61	62	63	64	65	66	67	68	69	70
	Ans.	3	4	4	2	4	3	1	3	4	2
	Q.No.	71	72	73	74	75	76	77	78	79	80
	Ans.	2	2	3	4	3	3	2	2	4	4
	Q.No.	81	82	83	84	85	86	87	88	89	90
	Ans.	1	1	3	4	3	2	2	2	3	2
	Q.No.	91	92	93	94	95	96	97	98	99	100
	Ans.	2	2	1	1	3	1	4	4	3	3
PART-C : BIOLOGY	Q.No.	101	102	103	104	105	106	107	108	109	110
	Ans.	4	1	2	1	3	2	2	3	1	2
	Q.No.	111	112	113	114	115	116	117	118	119	120
	Ans.	1	4	3	1	3	2	2	1	2	4
	Q.No.	121	122	123	124	125	126	127	128	129	130
	Ans.	1	2	1	3	1	1	4	1	1	4
	Q.No.	131	132	133	134	135	136	137	138	139	140
	Ans.	3	4	3	3	3	1	4	2	2	4
	Q.No.	141	142	143	144	145	146	147	148	149	150
	Ans.	1	2	4	1	1	1	3	4	1	3
	Q.No.	151	152	153	154	155	156	157	158	159	160
	Ans.	2	1	2	2	1	3	3	2	1	3
	Q.No.	161	162	163	164	165	166	167	168	169	170
	Ans.	1	1	4	4	3	3	2	2	3	2
	Q.No.	171	172	173	174	175	176	177	178	179	180
	Ans.	1	1	1	3	1	3	4	1	4	3
	Q.No.	181	182	183	184	185	186	187	188	189	190
	Ans.	1	4	2	1	1	4	1	2	4	1
	Q.No.	191	192	193	194	195	196	197	198	199	200
	Ans.	4	4	4	3	3	4	2	3	3	1

STUDENT'S SPACE

PAPER

PART-A: CHEMISTRY

1. At constant T, (नियत ताप T पर) $P_1V_1 = P_2V_2$

$1 \times 20 = P_2 \times 50$; $P_2 = \frac{20}{50} \times 1$

2.

	A	+	2B	$\rightleftharpoons$	2C
Initial moles	2		3		1
Final moles	$\frac{3}{2}$		2		2
Final concentration	$\frac{3}{4}$M		1 M		1 M

$$K_C = \frac{[C]^2}{[A]\ [B]^2} = \frac{1}{1 \times \left(\frac{3}{4}\right)} = \left(\frac{4}{3}\right)$$

3. $P \propto \frac{1}{V}$

$P \times 250 = 1000 \times P'$

$P' = \frac{1}{4}P$

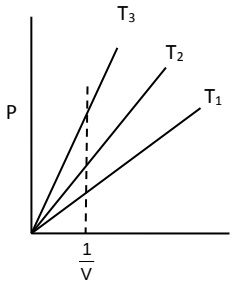
4. The reaction in which number of gaseous products (n_p) is equal to number of gaseous reactants, is not affected by change in pressure.
For reaction, $H_2 + I_2 \rightleftharpoons 2HI$
Number of products = 2 ;
Number of reactants = 2
Hence, it is not affected by change in pressure.
वह अभिक्रिया, जिसमें गैसीय उत्पादों की संख्या (n_p) गैसीय अभिकारकों की संख्या के बराबर होती है, को दाब में परिवर्तन द्वारा प्रभावित नहीं किया जाता है।
अभिक्रिया, $H_2 + I_2 \rightleftharpoons 2HI$
के लिए
उत्पादों की संख्या = 2 ;
अभिकारकों की संख्या = 2
अतः यह दाब में परिवर्तन द्वारा प्रभावित नहीं होता है।

5. $V \propto T$ (at constant n and P).
$V \propto T$ (नियत n व P पर)।

6. Both forward and backward reactions occur at all times with same speed.
अग्र व पश्च दोनों अभिक्रियाएँ सभी समय पर समान चाल (गति) से सम्पन्न होती है।

7. Boyles' Law

$P \alpha \frac{1}{V}$ [at constant Temperature and constant amount of gas.]



PV = nRT

for same value of $\frac{1}{V}$ higher the value of P, higher is temperature. So order of temperature.
$\Rightarrow T_3 > T_2 > T_1$

8. $$Q_C = \frac{\left(\frac{6}{2}\right)^2}{\left(\frac{2}{2}\right)\left(\frac{4}{2}\right)^3} = \frac{9}{8}$$

$Q_C < K_C$ so reaction will proceed in forward direction.
$Q_C < K_C$ इसलिए अभिक्रिया अग्र दिशा की ओर सम्पन्न होगी।

9. Covalent band is not intermolecular force of attraction it is band between two atom.

10. Time can not be calculated by equilibrium constant.
साम्य स्थिरांक द्वारा अभिक्रिया का समय ज्ञात नहीं किया जा सकता है।

11. $PV = \left(P + \frac{1}{100}P\right)V_2$

$V_2 = \frac{PV}{\frac{101}{100}P} \Rightarrow V_2 = \frac{100}{101}V$

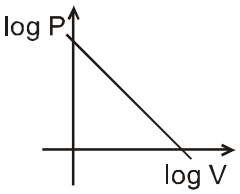
% decrease (% कमी) = $\frac{\frac{100}{101}V}{V} = \frac{100}{101}\%$

12. $2Ag_2O_{(s)} \rightleftharpoons 4Ag_{(s)} + O_{2(g)}$ For this reaction (अभिक्रिया के लिये)
$K_P = P_{O_2}$ (Ag_2O and Ag are in solid state)
(Ag_2O और Ag ठोस अवस्था में है।)
Same for both (दोनों के लिये समान)

13. $P_1V_1 = P_2V_2 \Rightarrow 750 \times 120 = P_2 \times 180$
$\therefore P_2 = 500$ mm Ans.

14. K_p of all gases reactions is not equal to K_c. It's depends on Δn value.
सभी गैसीय अभिक्रिया के लिए $K_p = K_c$ नहीं होता है।। यह Δn मान पर निर्भर करती है।

15.



16. $K_C = \frac{[HI]^2}{[H_2]\ [I_2]}$; $64 = \frac{x^2}{0.03 \times 0.03}$

$x^2 = 64 \times 9 \times 10^{-4}$

$x = 8 \times 3 \times 10^{-2} = 0.24$

x is the amount of HI at equilibrium amount of I_2 at equilibrium will be

साम्य पर HI की x मात्रा है तो साम्य पर I_2 की मात्रा होगी।

$0.30 - 0.24 = 0.06$

17. $\frac{n_1T_1}{P_1} = \frac{n_2T_2}{P_2}$ ∴

$\frac{1 \times 300}{2.46} = \frac{n_2 \times 400}{1}$

∴ $n_2 = 0.3$

∴ Mass of oxygen left बची हुई ऑक्सीजन का भार $= 0.3 \times 32 = 9.6$ g

∴ Mass of oxygen escaped ऑक्सीजन का निष्कासित भार $= 1 \times 32 - 9.6 = 22.4$ g.

18. 0.089

19. Using equation of state $\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$. So,

$\frac{1 \times 2.5}{300} = \frac{1.5 \times 2.0}{T}$ T = 360 K or 87ºC

अवस्था के समीकरण $\frac{P_1V_1}{T_1} = \frac{P_2V_2}{T_2}$. को प्रयुक्त करने पर, $\frac{1 \times 2.5}{300} = \frac{1.5 \times 2.0}{T}$ T = 360 K या 87ºC

20. 10

21. 2-Methoxy carbonyl ethanoic acid
2-मेथॉक्सी कार्बोनिल ऐथेनोइक अम्ल

22. 3-Cyclopropyl-2-pentene
3-साइक्लोप्रोपील-2-पेन्टीन

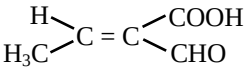
23. 3-Ethyl-2, 4-dimethylpentanenitrile
3-ऐथिल-2, 4-डाईमेथिलपेन्टेन नाइट्राईल

24. 6

25. 2,3-pentadiene
2,3-पेन्टाडाइईन

26. $CH_3-CH_2-N(\rightarrow O)=O$

27.



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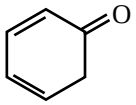

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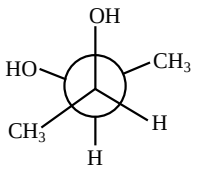
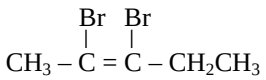


30. 8

31.



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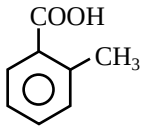

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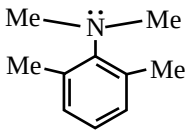
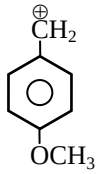


34. 

35. $-NO_2$

36. $\frac{n_1T_1}{P_1} = \frac{n_2T_2}{P_2} \Rightarrow \frac{3\times300}{3} = \frac{5\times400}{P_2}$

$P_2 = \frac{20}{3}$ atm

37. At Constant volume. There is no change in concentration (closed container).
नियत आयतन पर सान्द्रता में कोई परिवर्तन नहीं होता है। (बन्द पात्र)

38. A catalyst does not influences the values of equilibrium constant but Catalysts influence the rate of both forward and backward reactions equally.
उत्प्रेरक साम्यावस्था स्थिरांक के मान को नहीं बढ़ाते है लेकिन उत्प्रेरक प्रतीप व अग्र दोनो अभिक्रियाओं के वेग को समान रूप से प्रभावित करते है।

39. From Le-chatelier principle.
ली–शातेलिए सिद्धांत से।

40. $K_3 = \sqrt{K_1}.K_2$

41. K_p will remain same.
K_p समान बना रहता है।

42. $K_P = K_C (RT)^{\Delta n}$

$\frac{K_P}{K_C} = (RT)^{\Delta n}$ as $\Delta n < 0$

$\Rightarrow \quad \frac{K_P}{K_C} < 1 \Rightarrow \quad K_P < K_C$

(b) $\Delta n > 0$

(c) gaseous products is more than gaseous reactants,

(d) As the reaction is not containing any gaseous component therefore K_P is not defined for this.

(c) गैसीय क्रियाफल, क्रियाकारक से अधिक होगे।

(d) चूंकि अभिक्रिया कोई गैसीय अवयव नहीं रखता है अतः K_P इसके लिए अपरिभाषित है।

43. According to Boyle's law (बॉयल नियम के अनुसार) $V \propto \frac{1}{P}$

$V = \frac{\text{Constant}}{P}$; VP = Constant (नियत)

44. At constant T, (नियत ताप T पर) $P_1V_1 = P_2V_2$

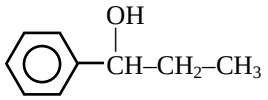
$1 \times 20 = P_2 \times 50$; $P_2 = \frac{20}{50} \times 1$

45. Absolute temperature is temperature measured in ºKelvin, expressed by T
परम तापमान ºKelvin में मापा जाता हैं जिसे T से प्रदर्शित करते हैं।

46. $CH_3 - \underset{\underset{CH_3}{|}}{CH} - \underset{\underset{CH_3}{|}}{CH} - CH_3$

47. Zn–Hg/HCl (3) $SnCl_2$–HCl
(4) N_2H_4/KOH

48. CH_3–CH=CH–CH_3 and CH_3–CH_2–CH=CH_2

49. 

50. s-Butyl bromide , β-Butylene
s-ब्यूटिल ब्रोमाइड, β-ब्यूटीलीन

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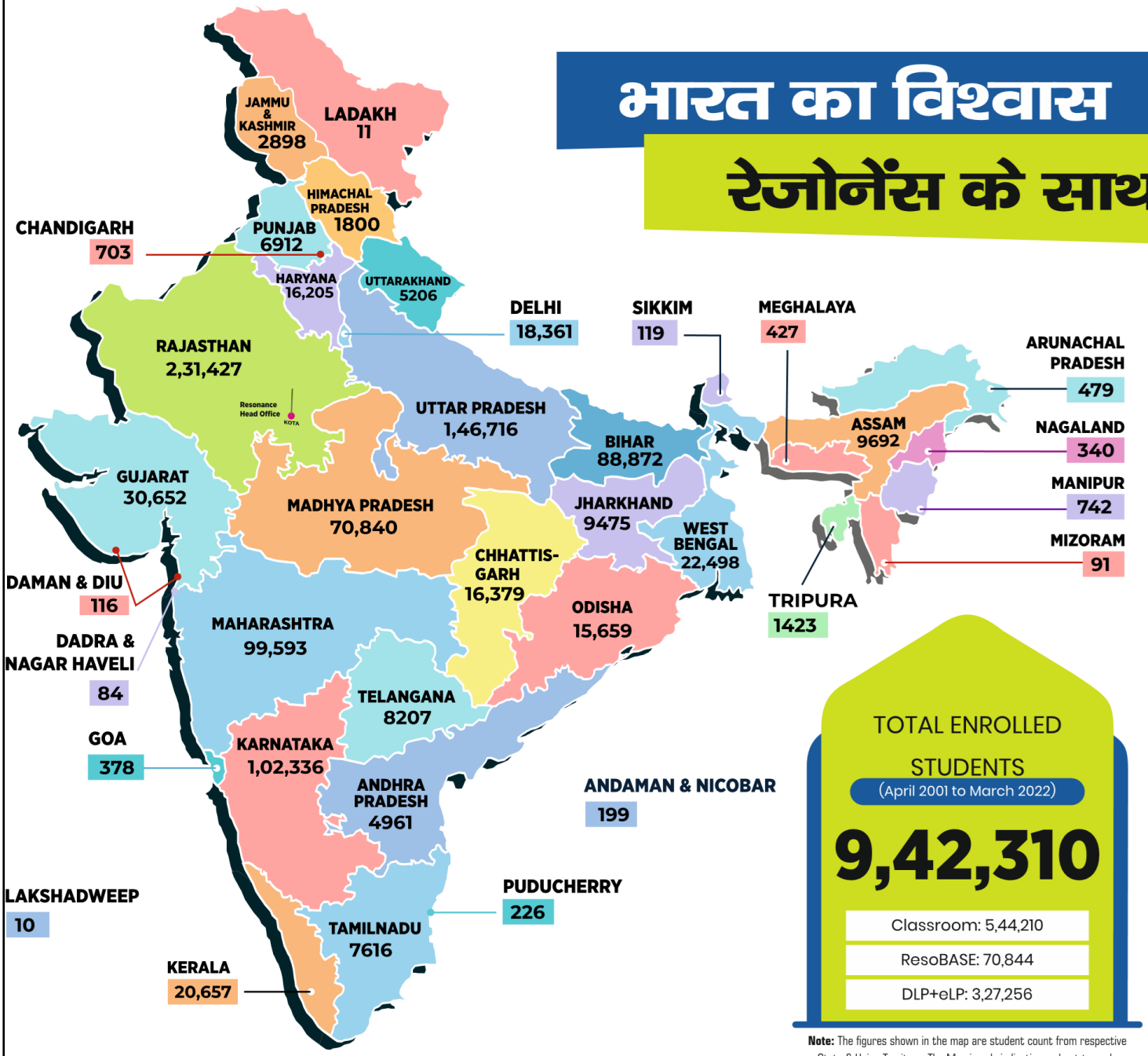

TOTAL ENROLLED STUDENTS
(April 2001 to March 2022)

9,42,310

- Classroom: 5,44,210
- ResoBASE: 70,844
- DLP+eLP: 3,27,256

Note: The figures shown in the map are student count from respective State & Union Territory. The Map is only indicative and not to scale

Resonance : The Legacy of 21 Years (2001-2022) of Academic Excellence

- **JEE (Adv.) / IIT-JEE** ▸ **50 हजार +** SELECTIONS SINCE 2002
  229 AIRs in TOP-100 (Classroom + DLP)
- **JEE (Main) / AIEEE** ▸ **2.40 लाख+** SELECTIONS SINCE 2009
  136 AIRs in TOP-100 (Classroom + DLP)
- **NEET (UG) / AIPMT** ▸ **19 हजार+** SELECTIONS SINCE 2012
  19 AIRs in TOP-100 (Classroom + DLP)

- **NTSE** SINCE 2006 ▸ **2440** Scholars
- **KVPY** SINCE 2006 ▸ **2859** Fellowship Winners
- **OLYMPIADS** SINCE 2006 ▸ **52** Medalists (Gold/Silver/ Bronze) in International Olympiads
- **CA & CS** SINCE 2013 ▸ **4179** Selections — 5 Times AIR-1 in CA & CS Exams
- **CLAT, SET & GPTU** SINCE 2014 ▸ **77** Selections — AIR-1 in GPTU