

CHEMISTRY CLASS - XII

Date :- 13- 06 - 2010

Duration : 1 Hours

Max. Marks : 77

Name :

Roll. No. :

INSTRUCTIONS

Do not break the seal of the question paper booklet before instructed to do so by the invigilator

Section A contains 15 questions, Section-B contains 1 questions and Section-C contains 2 questions. Total number of pages are 8. Please ensure that the Questions paper you have received contains ALL THE QUESTIONS in each section and PAGES.

SECTION - A

- Question 1 to Question 8 has four choices (A), (B), (C), (D) out of which **only one is correct** & carry 4 marks each. 1 mark will be deducted for each wrong answer.
- Question 9 to Question 12 has four choices (A), (B), (C), (D) out of which **one or more than one is/are correct** and carry 5 marks each. 2 mark will be deducted for each wrong answer.
- Question 13 to Question 15 are based upon a **paragraph**. Each Question has 4 choices (A), (B), (C), (D) out of which **only one is correct** & carry 3 marks each. 1 mark will be deducted for each wrong answer.

SECTION - B

- Questions 1 is **Matrix match type** questions. **Column-I** contains Four (A,B,C,D) entries and **Column-II** contains Five (P,Q,R,S,T) entries. Entry of **Column-I** are to be matched with **one or more than one entries** of **Column-II** or **vice versa**. 2 mark will be awarded for each part of **Column-I**. **NO NEGATIVE** marking for this section.

SECTION - C

- Questions 1 to Questions 2 are **Integer answer type questions** (whose answer are upto 4 digits) & carry 4 marks each. **NO NEGATIVE** marking for this section.

NOTE : GENERAL INSTRUCTION FOR FILLING THE OMR ARE GIVEN BELOW.

- Use only **HB pencil** or **blue/black pen (avoid gel pen)** for darkening the bubble.
- Indicate the correct answer for each question by filling appropriate bubble in your OMR answer sheet.
- The Answer sheet will be checked through computer hence, the answer of the question must be marked by shading the circles against the question by dark **HB pencil** or **blue/black pen**.
- While filling the bubbles please be careful about SECTIONS [i.e. Section-A include single correct answers, multi correct answers, paragraph type), Section-B (include match the column), Section-C (include integer answer type)].

SECTION-A	SECTION-B	SECTION-C																																																															
<p>For example if only 'A' choice is correct then, the correct method for filling the bubble is</p> <p style="text-align: center;">A B C D E ● ○ ○ ○ ○</p> <p>For example if only 'A & C' choices are correct then, the correct method for filling the bubble is</p> <p style="text-align: center;">A B C D E ● ○ ● ○ ○</p> <p>the wrong method for filling the bubble are</p> <p style="text-align: center;">⊙ ⊗ ⊕ ⊖ ⊗</p> <p>The answer of the questions in wrong or any other manner will be treated as wrong.</p>	<p>For example If Correct match for (A) is P; for (B) is R, S; for (C) is Q; for (D) is P, Q, S then the correct method for filling the bubble is</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th>P</th> <th>Q</th> <th>R</th> <th>S</th> <th>T</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>●</td> <td>○</td> <td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td>B</td> <td>○</td> <td>○</td> <td>●</td> <td>●</td> <td>○</td> </tr> <tr> <td>C</td> <td>○</td> <td>●</td> <td>○</td> <td>○</td> <td>○</td> </tr> <tr> <td>D</td> <td>●</td> <td>●</td> <td>○</td> <td>●</td> <td>○</td> </tr> </tbody> </table>		P	Q	R	S	T	A	●	○	○	○	○	B	○	○	●	●	○	C	○	●	○	○	○	D	●	●	○	●	○	<p>Ensure that all columns are filled. Answers, having blank column will be treated as incorrect. Insert leading zero(s) if required :</p> <table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>'6' should be filled as 0006</th> <th>'86' should be filled as 0086</th> <th>'1857' should be filled as 1857</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">●●●●○</td> <td style="text-align: center;">●●●●○</td> <td style="text-align: center;">○●●●○</td> </tr> <tr> <td style="text-align: center;">①①①①</td> <td style="text-align: center;">①①①①</td> <td style="text-align: center;">●①①①</td> </tr> <tr> <td style="text-align: center;">②②②②</td> <td style="text-align: center;">②②②②</td> <td style="text-align: center;">②②②②</td> </tr> <tr> <td style="text-align: center;">③③③③</td> <td style="text-align: center;">③③③③</td> <td style="text-align: center;">③③③③</td> </tr> <tr> <td style="text-align: center;">④④④④</td> <td style="text-align: center;">④④④④</td> <td style="text-align: center;">④④④④</td> </tr> <tr> <td style="text-align: center;">⑤⑤⑤⑤</td> <td style="text-align: center;">⑤⑤⑤⑤</td> <td style="text-align: center;">⑤⑤●⑤</td> </tr> <tr> <td style="text-align: center;">⑥⑥⑥●</td> <td style="text-align: center;">⑥⑥●●</td> <td style="text-align: center;">⑥⑥⑥⑥</td> </tr> <tr> <td style="text-align: center;">⑦⑦⑦⑦</td> <td style="text-align: center;">⑦⑦⑦⑦</td> <td style="text-align: center;">⑦⑦⑦●</td> </tr> <tr> <td style="text-align: center;">⑧⑧⑧⑧</td> <td style="text-align: center;">⑧⑧●⑧</td> <td style="text-align: center;">⑧●⑧⑧</td> </tr> <tr> <td style="text-align: center;">⑨⑨⑨⑨</td> <td style="text-align: center;">⑨⑨⑨⑨</td> <td style="text-align: center;">⑨⑨⑨⑨</td> </tr> </tbody> </table>	'6' should be filled as 0006	'86' should be filled as 0086	'1857' should be filled as 1857	●●●●○	●●●●○	○●●●○	①①①①	①①①①	●①①①	②②②②	②②②②	②②②②	③③③③	③③③③	③③③③	④④④④	④④④④	④④④④	⑤⑤⑤⑤	⑤⑤⑤⑤	⑤⑤●⑤	⑥⑥⑥●	⑥⑥●●	⑥⑥⑥⑥	⑦⑦⑦⑦	⑦⑦⑦⑦	⑦⑦⑦●	⑧⑧⑧⑧	⑧⑧●⑧	⑧●⑧⑧	⑨⑨⑨⑨	⑨⑨⑨⑨	⑨⑨⑨⑨
	P	Q	R	S	T																																																												
A	●	○	○	○	○																																																												
B	○	○	●	●	○																																																												
C	○	●	○	○	○																																																												
D	●	●	○	●	○																																																												
'6' should be filled as 0006	'86' should be filled as 0086	'1857' should be filled as 1857																																																															
●●●●○	●●●●○	○●●●○																																																															
①①①①	①①①①	●①①①																																																															
②②②②	②②②②	②②②②																																																															
③③③③	③③③③	③③③③																																																															
④④④④	④④④④	④④④④																																																															
⑤⑤⑤⑤	⑤⑤⑤⑤	⑤⑤●⑤																																																															
⑥⑥⑥●	⑥⑥●●	⑥⑥⑥⑥																																																															
⑦⑦⑦⑦	⑦⑦⑦⑦	⑦⑦⑦●																																																															
⑧⑧⑧⑧	⑧⑧●⑧	⑧●⑧⑧																																																															
⑨⑨⑨⑨	⑨⑨⑨⑨	⑨⑨⑨⑨																																																															

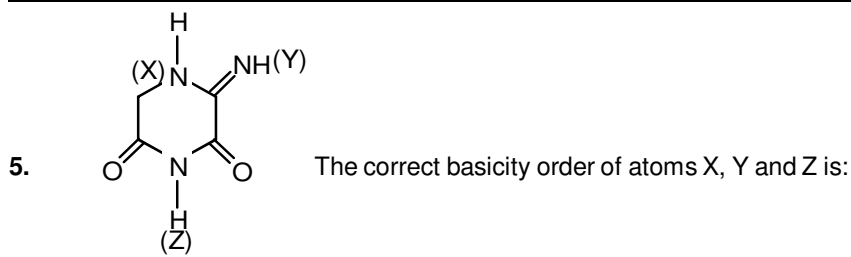
SECTION – A

[STRAIGHT OBJECTIVE TYPE]

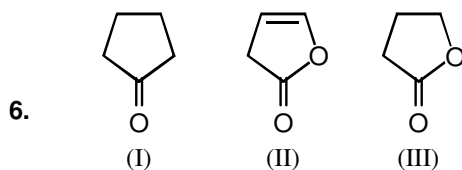
Q.1 to Q.8 has four choices (A), (B), (C), (D) out of which **ONLY ONE** is correct

1. 100 ml 1M H_2SO_4 solution ($d_{\text{sol}} = 1.5 \text{ gm/ml}$) is mixed with 400 ml of water ($d_{\text{water}} = 1 \text{ gm/ml}$). Density of final solution is 1.25 gm/ml.
Final molarity of H_2SO_4 solution is:
(A) 0.20 M (B) 0.250 M (C) 0.227 M (D) 0.352 M
2. If α -hydrogen is replaced by CH_2COOH in propionic acid, then IUPAC name of the compound thus formed will be:
(A) 3-methyl butane-1,4-dioic acid (B) 2-methyl butane-1,4-dioic acid
(C) 3-methyl butane-1,4-dicarboxylic acid (D) None of these
3. The mass % of oxygen atom in 118% oleum is
(A) 30.53 (B) 61.06 (C) 80 (D) 40.81
4. Which of the following is correct if heat transferred to an ideal gas is equal to negative of change in its internal energy.
(A) $TV^{\gamma-1} = \text{const}$ (B) $TV^{2(\gamma-1)} = \text{const}$ (C) $TV^{(1-\gamma)} = \text{const}$ (D) $TV^{(\gamma-1)/2} = \text{const}$

(SPACE FOR ROUGH WORK)



- (A) $X > Y > Z$ (B) $Z > Y > X$ (C) $Z > X > Y$ (D) $Y > X > Z$



Among these compounds the order of enol content should be:

- (A) $I > II > III$ (B) $III > II > I$ (C) $II > I > III$ (D) $II > III > I$

7. Two moles of CO and 1 mole of O_2 were allowed to react completely to form CO_2 at 300 K. If the heat liberated during the course of reaction: $2 CO + O_2 \rightarrow 2CO_2$ at constant pressure is 560 kJ, the amount of heat liberated by carrying the reaction in 1 litre vessel will be (1 litre-atm = 0.1 kJ):
- (A) + 58 kJ (B) + 535.37 kJ (C) + 557.54 kJ (D) + 55.75 kJ

(SPACE FOR ROUGH WORK)



8. The IUPAC name of vinyl ethenyl acetylene is:
(A) Hexa-1,5-dien-3-yne (B) Hexane-1,5-dien-3-yne
(C) Hexa-3-yne-1,5-diene (D) None of these

[MULTIPLE OBJECTIVE TYPE]

Q.9 to Q.12 has four choices (A), (B), (C), (D) out of which **ONE OR MORE THAN ONE** is/are correct.

9. Which of the following is/are state function as well as intensive property.
(A) Temperature (B) Enthalpy (C) Internal energy (D) Specific heat capacity
10. Which of the following statement(s) is/are incorrect:
(A) Magnitude of work done in adiabatic expansion is greater than isothermal expansion
(B) Final temperature in reversible adiabatic expansion is greater than irreversible adiabatic expansion
(C) Final temperature in reversible adiabatic compression is less than irreversible adiabatic compression
(D) If initial and final pressures are same in isothermal and adiabatic compression then $V_{\text{iso}}(\text{final}) > V_{\text{adia}}(\text{final})$
11. Which of the following is/are incorrect.
(A) In adiabatic free expansion of ideal gas $\Delta T \neq 0$, $\Delta H = 0$ & $\Delta U = 0$
(B) $\Delta U = nC_v \Delta T$ expression is valid for real gases in all conditions.
(C) Enthalpy is an extensive property but change in enthalpy (ΔH) is not a state function.
(D) For isothermal reversible expansion of an ideal gas $\Delta U = 0$, $\Delta H = 0$ & $q = 0$

(SPACE FOR ROUGH WORK)

12. (1) Acetaldehyde oxime
(2) 1,4-Dimethyl cyclohexane
(3) Cyclohexene
(4) Di secbutyl ketone oxime
Which of the above compound(s) will show geometrical isomerism
(A) 1,2,3,4, (B) 1, 2, 3 (C) 1, 2 (D) 1, 3, 4

[COMPREHENSION TYPE]

Q.13 to Q.15 are based upon a **paragraph**. Each questions has four choices (A), (B), (C), (D) out of which **ONLY ONE** is correct.

The standard enthalpy of formation of FeO and Fe₂O₃ is –65 kcal mol⁻¹ and –197 kcal mol⁻¹ respectively. If a mixture containing FeO and Fe₂O₃ in 2 : 1 mole ratio on oxidation is changed into 1 : 2 mole ratio. If initially one mole of the reaction mixture was taken, answer the following questions.

13. Initial mole of Fe₂O₃ in the mixture
(A) 1/3 (B) 2/3 (C) 3/4 (D) None of these
14. No. of moles of FeO used in the reaction
(A) 2/3 (B) 2/5 (C) 3/5 (D) None of these
15. Thermal energy released by per mole of the initial mixture.
(A) 12.3 kcal (B) 13.4 kcal (C) 15.6 kcal (D) None of these

(SPACE FOR ROUGH WORK)



SECTION – B

[MATRIX MATCH TYPE]

Q.1 has four choices (A), (B), (C), (D) out of which **ONE OR MORE THAN ONE** is/are correct

1. Match the following

[T'_2 is the final temperature of irreversible process and T_2 is a final temperature of reversible process.]

Column-I

Column-II

(A) Isothermal reversible expansion

(P) $\Delta S_{\text{system}} = nR \ln \frac{V_2}{V_1}$, $\Delta S_{\text{surrounding}} < 0$

(B) Adiabatic reversible compression

(Q) $\Delta S_{\text{system}} > 0$, $\Delta S_{\text{surrounding}} = 0$

(C) Adiabatic irreversible compression

(R) $\Delta S_{\text{system}} = nC_v \ln \frac{T'_2}{T_2}$, $\Delta S_{\text{surrounding}} = 0$

(D) Adiabatic irreversible expansion

(S) $\Delta S_{\text{system}} < 0$, $\Delta S_{\text{surrounding}} > 0$

(T) $\Delta S_{\text{system}} = 0$, $\Delta S_{\text{surrounding}} = 0$

(SPACE FOR ROUGH WORK)

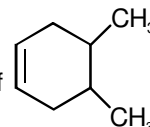
SECTION – C

[INTEGER ANSWER TYPE]

Q.1 to Q.2 are INTEGER ANSWER TYPE questions

1. Total no. of amides of $C_5H_{11}NO$ showing tautomerism is.

2. Total no. of secondary amyl alcohol is x and total no. of geometrical isomers of



is y , then

sum of x and y is:

(SPACE FOR ROUGH WORK)

Rough Space