



GUJCET-2022

Time: 1 Hours
Maximum Marks: 40

CHEMISTRY

General Instructions

1. The Chemistry test consists of 40 questions. Each question carries 1 mark. For each
2. correct response, the candidate will get **1** mark. For each incorrect response, **1/4** mark will be deducted. The maximum marks are **40**.
3. This Test is of 1 hour duration.

- (1) Which is known as “Copper Matte”?
(A) $\text{Cu}_2\text{O} + \text{FeS}$ (B) $\text{Cu}_2\text{S} + \text{FeS}$ (C) $\text{Cu}_2\text{S} + \text{FeO}$ (D) $\text{Cu}_2\text{O} + \text{FeO}$
- (2) Which products are obtained by reaction of hot and concentrated NaOH with dichlorine?
(A) $\text{NaCl} + \text{NaClO}_3 + \text{H}_2\text{O}$ (B) $\text{NaCl} + \text{NaClO}_4 + \text{H}_2\text{O}$
(C) $\text{NaCl} + \text{NaClO}_2 + \text{H}_2\text{O}$ (D) $\text{NaCl} + \text{NaOCl} + \text{H}_2\text{O}$
- (3) Hybridisation in XeF_2 and XeF_4 are respectively.....
(A) sp and sp^3 (B) sp^3d and sp^3d^2 (C) sp^2 and sp^3d^2 (D) sp^3d and sp^3
- (4) Which is the correct options for bonds and their number in pyrophosphoric acid?
(A) Two P–OH, Four P = O, Two P–O–P
(B) Four P–OH, One P = O, One P–O–P
(C) Two P–OH, Four P = O, One P–O–P
(D) Four P–OH, Two P = O, One P–O–P
- (5) Name a transition element which does not exhibit variable oxidation states.
(A) Scandium (B) Copper (C) Zinc (D) Chromium
- (6) Which statement is incorrect from the following?
(A) Atomic sizes of elements of ‘4d’ series is greater than corresponding elements of ‘3d’ series
(B) ‘Cd’ is not consider as transition element
(C) CrO is basic, but Cr_2O_3 is amphoteric
(D) Atomic sizes of elements of ‘5d’ series is greater than corresponding ‘4d’ series
- (7) How many numbers of Geometrical Isomers of $[\text{Pt}(\text{NH}_3)(\text{Br})(\text{Cl})(\text{Py})]$ will have?
(A) 1 (B) 2 (C) 3 (D) 4
- (8) How many numbers of mole Ions produced from aqueous solution of 1 mole Iron (III) hexacyanido Ferrate (II) complex?
(A) 5 (B) 7 (C) 4 (D) 6
- (9) Which of the following ligand is ambidentate?
 NO_3^- , NO_2^- , CN^- , SCN^-
(P) (Q) (R) (S)
(A) Q and S (B) P and Q (C) R and S (D) Q and R
- (10) How many numbers of sigma (σ) and pi (π) bonds in DDT respectively?
(A) 30 and 6 (B) 29 and 6 (C) 28 and 6 (D) 21 and 6

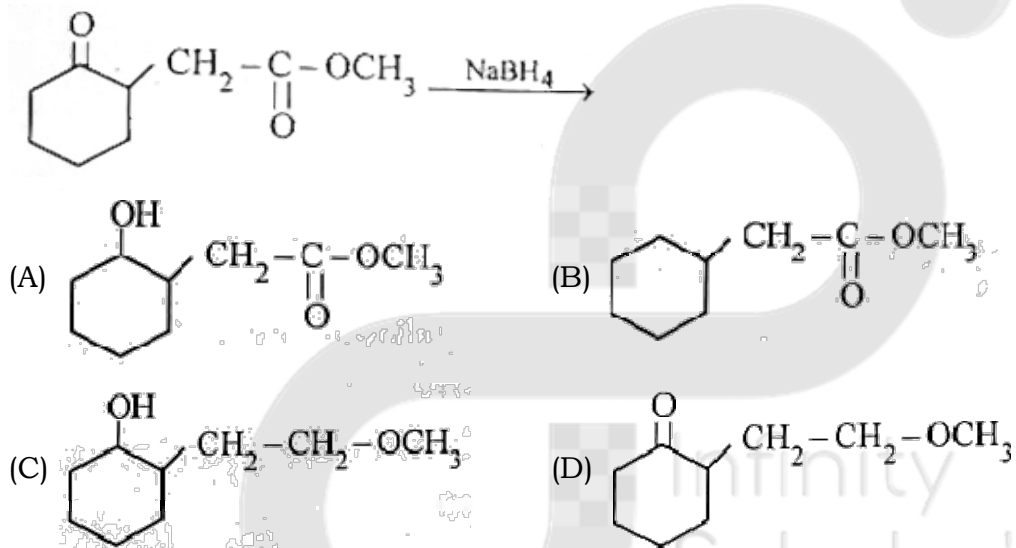
(11) Which of the following undergoes S_N2 reaction most readily?

- (A) $C_6H_5C(CH_3)(C_6H_5)Br$ (B) $C_6H_5CH(C_6H_5)Br$
 (C) $C_6H_5CH(CH_3)Br$ (D) $C_6H_5CH_2Br$

(12) From following reactions, which relation does not give "Benzene"?

- (A) $C_6H_5OH + Zn \xrightarrow{\Delta}$ (B) $C_6H_5N_2^+Cl^- + H_3PO_2 + H_2O \longrightarrow$
 (C) $C_6H_5COONa + \text{Sodalime} \xrightarrow{\Delta}$ (D) $C_6H_5OH + H_2CrO_4 \xrightarrow{[O]}$


(13) Which product is obtained from following reaction?



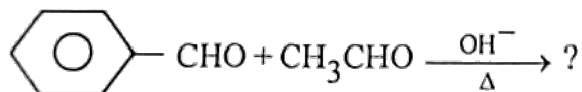
(14) Which method is used to prepare salicylic acid from phenol?

- (A) Etard reaction (B) Kolbe's reaction
 (C) Stephen reaction (D) Reimer-Tiemann reaction

(15) Which of the following compounds will not give "Iodoform" by reaction with "sodium hypiodide"?

- (A)  (B) 
 (C) $CH_3 - CHO$ (D) $CH_3 - CH_2 - CO - CH_2 - CH_3$

(16) What will be the main product in the following reaction?



- (A) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}_2\text{CHO}$ (B) $\text{C}_6\text{H}_5\text{CH}=\text{CHCHO}$
 (C) $\text{C}_6\text{H}_5\text{CH}_2\text{CH}(\text{OH})\text{CHO}$ (D) $\text{C}_6\text{H}_5\text{CH}=\text{CHCOOH}$

(17) Which is the incorrect order of increasing acidic strength for the following?

- (A) $\text{CH}_3\text{COOH} < \text{CH}_2\text{ClCOOH}$
 (B) $\text{CH}_2\text{ClCOOH} < \text{CH}_2\text{FCOOH}$
 (C) $\text{CH}_2\text{FCH}_2\text{CH}_2\text{COOH} < \text{CH}_3\text{CHFCH}_2\text{COOH}$
 (D) $\text{HCOOH} < \text{C}_6\text{H}_5\text{COOH}$

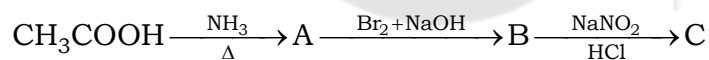
(18) How many numbers of Isomer for the compound having molecular formula $\text{C}_3\text{H}_9\text{N}$?

- (A) 4 (B) 3 (C) 2 (D) 5

(19) From which of the following reaction primary amine is produced?

- (A) Reduction of Nitrile Compounds
 (B) Reduction of Amide Compounds
 (C) Hoffmann bromamide degradation reaction
 (D) Above all reactions

(20) Identify the compound 'C' from following reaction.



- (A) CH_3OH (B) $\text{CH}_3\text{CH}_2\text{OH}$
 (C) $\text{CH}_3 - \text{CH}_2\text{N}_2^+\text{Cl}^-$ (D) $\text{CH}_3 - \text{CH}_2 - \text{NH}_2$

(21) Select proper statement from following True (T) and False (F) statements.

- (I) Pentose sugar + base \square Nucleotide
 (II) Nucleotide + Phosphate \square Nucleoside
 (III) DNA contains four bases A, G, C and T
 (IV) RNA contains four bases A, G, C and U

(A) FFTT (B) FTFT (C) FTFT (D) TTTT

- (22)** Which glycosidic linkage occurs in 'Amylopectin'?
- (A) $C_1 - C_2$ and $C_1 - C_6$ (B) $C_1 - C_4$ and $C_1 - C_6$
 (C) $C_1 - C_3$ and $C_1 - C_4$ (D) $C_2 - C_4$ and $C_4 - C_6$
- (23)** Which polymer is used in manufacture of paints and lacquers?
- (A) Neoprene (B) Teflon (C) Glyptal (D) Melamine
- (24)** Which of the following polymer is not obtained by the condensation polymerization?
- (A) Nylon-6, 6 (B) Nylon-2-Nylon-6
 (C) Decron (D) Polyacrylonitrile
- (25)** Which of the following drug is used for treatment of Acidity?
- (A) Salvarsan (B) Meprobamate (C) Ranitidine (D) Codein
- (26)** Which Artificial sweetener is unstable at cooking temperature?
- (A) Alitame (B) Aspartame (C) Sucralose (D) Saccharin
- (27)** Cell edge length in bcc, ccp and simple cubic unit cell is respectively as.....
- (A) $2\sqrt{2}r, \frac{4r}{\sqrt{3}}, 2r$ (B) $2r, 2\sqrt{2}r, \frac{4r}{\sqrt{3}}$ (C) $2r, \frac{4r}{\sqrt{3}}, 2\sqrt{2}r$ (D) $\frac{4r}{\sqrt{3}}, 2\sqrt{2}r, 2r$
- (28)** Atoms of element N form hcp lattice and those of the element M occupy $1/3^{\text{rd}}$ of tetrahedral voids. What will be the formula of the compound formed by the elements M and N?
- (A) M_2N_3 (B) M_3N_2 (C) M_4N_3 (D) M_3N
- (29)** Calculate the mole fraction of aqueous solution of 1 molal urea (NH_2CONH_2)
- (A) 0.01800 (B) 0.01768 (C) 0.01878 (D) 0.01698
- (30)** Value of Henry's constant K_H
- (A) increases with increase in temperature
 (B) decreases with increase in temperature
 (C) no effect by changing temperature
 (D) first decreases and then increases by increase in temperature
- (31)** What is value of Van't Hoff factor (i) when 80% of CaCl_2 dissociates?
- (A) 3 (B) 2.40 (C) 2.70 (D) 2.30
- (32)** How much electricity in terms of Faraday is required for reduction of 2 mole $\text{Cr}_2\text{O}_7^{2-}$ into Cr^{3+} in acidic medium?
- (A) 6 F (B) 3 F (C) 12 F (D) 9 F

- (33) Which is proper value of x for the following to increase cell potential of $Zn_{(s)} | Zn^{2+}_{(xM)} || Cu^{2+}_{(0.02M)} | Cu_{(s)}$
- (A) $x > 0.02 M$ (B) $x < 0.02 M$ (C) $x = 0.02 M$ (D) $x \geq 0.02 M$
- (34) Which substance is used as oxidising agent in nickel-cadmium cell?
- (A) Ni (B) Cd (C) Ni(OH)₃ (D) CdO
- (35) What is the value of slope when graph plotted of $\log \frac{[R]_0}{[R]}$ Vs t (time) for first order reaction?
- (A) $-K$ (B) $\frac{K}{2.303}$ (C) $-\frac{K}{2.303}$ (D) $\frac{2.303}{K}$
- (36) A reaction is first order with respect to a reactant A and second order with respect to reactant B. What is the effect of rate when concentration of both A and B increased by doubled?
- (A) Doubled (B) Quadrupled (C) Eight times (D) Sixteen times
- (37) Which colloidal sol results, when highly diluted solution of AgNO₃ is added to highly diluted KI solution?
- (A) AgI/Ag⁺ (B) AgI/K⁺ (C) AgI/NO₃⁻ (D) AgI/I⁻
- (38) Match the types of colloidal systems given in Column-I with the name given in Column-II.
- | Column-I | | Column-II | |
|----------|-----------------|-----------|---------|
| (i) | Solid in liquid | (p) | Aerosol |
| (ii) | Liquid in solid | (q) | Foam |
| (iii) | Liquid in gas | (r) | Sol |
| (iv) | Gas in liquid | (s) | Gel |
- (A) (i) □□(r), (ii) □□(s), (iii) □□(q), (iv) □□(p)
- (B) (i) □□(s), (ii) □□(r), (iii) □□(p), (iv) □□(q)
- (C) (i) □□(r), (ii) □□(s), (iii) □□(p), (iv) □□(q)
- (A) (i) □□(p), (ii) □□(q), (iii) □□(r), (iv) □□(s)
- (39) In which colloids both Lyophilic and Lyophobic parts present?
- (A) Rubber sol (B) Gold sol (C) Micelle (D) Sol of As₂S₃

ANSWER KEY | GUJCET-CHEMISTRY-2022

1.	B	2.	A	3.	B	4.	D	5.	C	6.	D	7.	C	8.	B
9.	A	10.	B	11.	D	12.	D	13.	A	14.	B	15.	D	16.	B
17.	D	18.	B	19.	D	20.	A	21.	A	22.	B	23.	C	24.	D
25.	C	26.	B	27.	D	28.	A	29.	B	30.	A	31.	C	32.	C
33.	B	34.	C	35.	B	36.	C	37.	D	38.	C	39.	D	40.	C

EASY	18
MODERATE	17
HARD	5

CHAPTER NAME	NO. OF QUESTIONS
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Unit 2 Solutions	3
Unit 3 Electrochemistry	3
Unit 4 Chemical Kinetics	2
Unit 5 Surface Chemistry	3
Unit 6 General Principles and Processes of Isolation of Elements	2
Unit 7 The p-Block Elements	4
Unit 8 The d-and f-Block Elements	2
Unit 9 Coordination Compounds	3

Unit 10 Haloalkanes and Haloarenes	10
Unit 11 Alcohols, Phenols and Ethers	
Unit 12 Aldehydes, Ketones and Carboxylic Acids	
Unit 13 Amines	
Unit 14 Biomolecules	2
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