Syllabus for 2nd term examination March / April 2022

| Class | 12 Th |
|---------|------------------|
| Subject | Chemistry |

1. Total Chapters = Chapter 08 to 16 = 09 Chapters

2. Maximum Marks = 50
3. Duration = 03 Hr
4. Total No of Question: = 33

a. Q.1 to Q. 20 Objective type Questions (1 Mark each)

b. Q.21 to Q. 29 Subjective type Questions (2 Marks each)

c. Q. 30 to Q, 33 Subjective type Questions (3 Marks each)

5. Chapter wise distribution of Marks

| Sr. No. | Chapter No. | Name of Chapter | 1 Mark Questions | 2 Marks Questions | 3 Marks Questions | Total Questions | Total Weightage |
|------------|--------------|---|---------------------|----------------------|----------------------|--------------------|--------------------|
| 1. | Chapter – 8 | d- and f - block elements | 2 | - | 1 | 3 | 5 |
| 2. | Chapter – 9 | Coordination Compounds | 3 | 2 | - | 5 | 7 |
| 3. | Chapter – 10 | Haloalkanes and Haloarenes | 2 | 1 | 1 | 4 | 7 |
| 4. | Chapter – 11 | Alcohols, Phenols and Ethers | 3 | 2 | - | 5 | 7 |
| 5. | Chapter – 12 | Aldehydes, Ketones and Carboxylic Acids | 3 | 1 | 1 | 5 | 8 |
| 6. | Chapter – 13 | Amines | 3 | - | 1 | 4 | 6 |
| 7. | Chapter – 14 | Biomolecules | 2 | 1 | - | 3 | 4 |
| 8. | Chapter – 15 | Polymers | 2 | 1 | - | 3 | 4 |
| 9. | Chapter – 16 | Chemistry in everyday life | - | 1 | - | 1 | 2 |
| Total | | | 20 | 9 | 4 | 33 | 50 |

HIMACHAL PRADESH BOARD OF SCHOOL EDUCATION, DHARAMSHALA Model Question Paper

Second Term Examination, March / April 2022

Class – 12

| Duration – 03:00 Hr | | 00 Hr | Chemistry | | | | M.M | 1.: 50 |
|---------------------|---|---|--|-----------------|-----------------------------------|--|-----------------------------|-----------|
| Instructions: | | i) ii) iii) | All questions are compulsory. While answering your Questions, you must indicate on your Answer-book the same Question of the same questions. | | | | | |
| | | iv) | | arry 1ma | ırk each, | Question No. 21 to | o 29 carry 2 marks each and | 1 |
| | | v) | Make neat and clean o | - | | | | |
| Q.1 | The d block elements belong to | | | | | | | (1) |
| | a) | 2 Grou | up to 12 Group | | b) | 3 Group to 11 Gr | oup | |
| | d) | 4 Grou | ıp to 12 Group | | d) | 3 Group to 12 Gr | oup | |
| Q.2 | The re | The relative ease of dehydration of alcohols follows the following order: | | | | | | |
| | a) | Tertia | ry < Secondary < Primary | • | b) | Primary < Second | lary < Tertiary | |
| | c) | Secon | dary > Primary > Ter <mark>tiar</mark> y | | c) | Secondary < Prim | ary < Tertiary | |
| Q.3 | Which of the following is prepared by Gabriel F | | | hthalimi | ide reacti <mark>on</mark> | | (1) | |
| | a) | Primar | ry Aromatic Amines | | b) | Secondary Amine | es | |
| | c) | Alipha | tic Primary Amines | | c) | Tertiary Amines | | |
| Q.4 | which of the following is correct with respect to [Mn(CN)] ²⁻ | | | | | | (1) | |
| | a) | It is ds | p² hybridized, square pla | ner | b) | It is d ² sp ³ hybridi | sed, Octahedral | |
| | c) | It is sp | ³ d ² hy <mark>bridized, Octahed</mark> r | ⁻ al | d) | It is sp ² d ² hybridi | sed, square planer | |
| Q.5 | Alkyl halides react with which of the following number of carbon atoms present in halide. | | | metal in | dry ether t <mark>o give h</mark> | ydrocarbons containing dou | uble the (1) | |
| | a) | K | | b) | Na | | | |
| | c) | Zn | | d) | Mg | | | |
| Q.6 | Three important reagents are required for the conversion of propyne to Acetone. Identify which of the following is not among three? | | | | | | | ie (1) |
| | a) | HgSO ₄ | | b) | Zink Du | ust | | |
| | c) | H ₂ SO ₄ | | d) | Water | | | |
| Q.7 | The protein responsible for blood clotting is | | | | | | | |
| | a) (c) | Album Fibroir | | (b) (d) | Globul Fibrino | | | |
| Q.8 | Amines play important role in survival of human life. Naturally they are found in | | | | | | | (1) |
| | a) | Vitami | ins | b) | Proteir | าร | | |
| | c) | Alkalo | ids | d) | All of t | hese | | |

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| Q.9 | The process of vulcanisation of rubber takes place with | | | | | | |
|------|--|--|------------------------|---|----------|--|--|
| | a) | Phosphorous | b) | Sulphur | | | |
| | c) | Nitrogen | d) | Carbon | | | |
| Q.10 | Q.10 When reaction is carried out between two different aldehydes or Ketones in basic medium, is called | | | | | | |
| | a) | Complex Aldol Condensation | b) | Cannizzaro Reaction | | | |
| | c) | Rosenmund Reaction | d) | Cross Aldol Condensation | | | |
| Q.11 | Comp | lete the following reaction: | | | (1) | | |
| | CH₃C⊦ | $I_2CH=CH_2 + HBr \xrightarrow{Peroxide} \dots$ | | | | | |
| Q.12 | The ox | xidation Number of Cobalt in K[Co | o(CO) ₄] i | is | (1) | | |
| Q.13 | | enzyme used for the con | version | of C ₆ H ₁₂ O ₆ to Ethyl Alcohol. | (1) | | |
| Q.14 | What | is the IUPAC name of the coordin | nation co | ompound [Pt (NH ₃) ₂ Cl (NO ₂)] | (1) | | |
| Q.15 | The m | onomer unit of Teflon is | | | (1) | | |
| Q.16 | Which | reaction is used to prepare $lpha$ - h | alo Acio | J | (1) | | |
| Q.17 | The so | ource of Nitrogen in Gabriel synth | nesis rea | oction of Amine is | (1) | | |
| Q.18 | How r | nany d electrons are the <mark>re</mark> on Fe | 2+ | | (1) | | |
| Q.19 | The Scientific name of Vitamin E is | | | | | | |
| Q.20 | Groups like cyanides and nitrites possess two nucleophilic centres and are called | | | | | | |
| Q.21 | Oxidation of Ketone involves carbon – carbon bond cleavage. Explain the formation of product on oxidation of 2,5-dimethylhexean-3-one and give its name? (2) | | | | | | |
| Q.22 | | is meant by t <mark>he stability of a coo</mark> ty of the com <mark>plex.</mark> | rdinatio | n compound in solution? Name the factors which govern | n (2) | | |
| Q.23 | Although phenoxide ion has more number of resonating structures than carboxylate ion, carboxylic acid is stronger acid than phenol. Why? | | | | | | |
| Q.24 | Q.24 Haloalkanes undergo nucleophilic substitution whereas haloarenes undergo electrophilic substitution | | | | | | |
| | Explai | n. | | | (2) | | |
| Q.25 | a) | Define Essential amino acids | | | | | |
| | b) | Define Enzyme | | | (1,1 | | |
| | | OR | | | | | |
| | a) | Write any two functions of Car | bohydra | ates in plants? | | | |
| | b) | Differentiate between DNA and | RNA on | the basis of base they contain? | (1,1 | | |
| Q.26 | | ge the following in decreasing order crophenol, 3,5-dinitrophe | | cidic strength. Give explanation for the arrangement: 2,4,6-trinitrophenol. OR | (2) | | |
| | Explai | n the reaction of phenol with dilu | ute nitrio | c acid at 298K. Write equation. | (2) | | |
| Q.27 | a) What are the monomeric repeating units of Nylon-6 and Nylon-6,6? | | | | | | |

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| | b) | Write the name and structures of mo | nomer of Buna – S . | (1,1 | 1) | | | | |
|------|----------|---|---------------------------------|---------------------------------|------|--|--|--|--|
| Q.28 | a) | Draw the figure to show the splitting | of d- orbitals in an octahedra | l crystal field? | | | | | |
| | b) | Aqueous copper sulphate solution (bl potassium chloride. Explain | ue in colour) gives a bright gi | reen solution with aqueous (1,1 | 1) | | | | |
| Q.29 | a) | What do you mean by denaturation o | f Proteins? | | | | | | |
| | b) | What are the products of hydrolysis of | f sucrose? | (1, | .1) | | | | |
| Q.30 | a) | What are interstitial Compounds? | | | | | | | |
| | b) | What is meant by disproportionation | of an oxidation state? Give e | xample (1, | .2) | | | | |
| Q.31 | a) | Explain why dilute Sulphuric acid is ac | Ided in nitration of phenol? | | | | | | |
| | b) | Alkyl halides, though polar, are immis | cible with water. | | | | | | |
| | c) | How will you convert Chlorobenzene | to biphenyl? | (1,1 | .,1) | | | | |
| | | | OR | | | | | | |
| | a) | Give reasons why the presence of nitro group (-NO ₂) at ortho or para positions increases the reactivity of haloarenes towards nucleophilic substitution reactions. | | | | | | | |
| | b) | Grignard's reagents should be prepar | ed under anhydrous conditio | ns. | | | | | |
| | c) | How will you convert Aniline to Bromobenzene? | | | | | | | |
| Q.32 | Descri | be the following: | | | | | | | |
| | a) | Cross Aldol Condensation | | | | | | | |
| | b) | Decarboxyl <mark>ation</mark> | | (1½, 1 | .½) | | | | |
| | | | OR | | | | | | |
| | a) | Friedel – Crafts Acylation | | | | | | | |
| | b) | Aldol Condensation Reaction | | (1½, 1 | .½) | | | | |
| Q.33 | Illustra | ate the following reaction with suitable | example: | | | | | | |
| | a) | Hofmann's bromamide reaction | | | | | | | |
| | b) | Sandmeyer's Reaction | | (1½, 1 | 1/2) | | | | |
| | | | OR | | | | | | |
| | How v | vill you carry out the following conversion | ons? | | | | | | |
| | a) b) | Ethanoic Acid to methanamine Nitrobenzene to benzoic acid | | (1½, 1½ | ½) | | | | |

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