Himachal Pradesh Model Paper

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HIMACHAL PRADESH BOARD OF SCHOOL EDUCATION, DHARAMSHALA
MODEL QUESTION PAPER - CHEMISTRY
CLASS - 10+2

Time Allowed : 3 hours MM : 60

Instructions :

1. All questions are compulsory.
2. Marks for each question are indicated against it.
3. Question No. 1 to 12 are multiple choice questions and carry one mark each.
4. Question No. 13 to 21 carry two marks each.
5. Question No. 22 to 26 carry three marks each.
6. Question No. 27 to 29 carry five marks each.
7. Internal choice is given wherever applicable.

Q.1. The empty space within hcp arrangement is (1)
(a) 34% (b) 47% (c) 32% (d) 26%

Q.2. Which of the following modes of expressing concentration is indipendent of temperature (1)
(a) Normality (b) Molarity (c) Molality (d) Formality

Q.3. The units of specific conductance are (1)
(a) Ohm−1 Cm−1 (b) Ohm−1 Cm−2
(c) Ohm−1 (d) Cm−1

Q.4. Which of the following has maximum flocculation values (1)
(a) Na^+ (b) PB^{2+} Pb^{2+} (c) Al^{3+} (d) Ba^{2+}

Q.5. Oleum is (1)
(a) H_2SO_4 (b) $H_2S_2O_6$ (c) $H_2S_2O_7$ (d) $H_2S_2O_8$

Q.6. Oxidation state of Ni in complex $[Ni(CO)_4]$ (1)
(a) 2 (b) Zero (c) 3 (d) 4

Q.7. A primary alkylhalide would preffer to undergo (1)
(a) SN^2 reaction (b) SN^1 reaction
(c) Elimination reaction (d) None of these

Q.8. Dehyration of tertiary alcohol with cu at 573k gives (1)
(a) Alcohol (b) Benzone (c) Alkene (d) Aldohyde

Q.9. IUPAC name of CHO is
CHO (1)
(a) Elhanedial (b) Elhanedioce acid
(b) Elhanal (d) Acetal

Q.10. Which of following is used to presence biological specimen (1)
(a) Iodine (b) Formaldehyde (c) Acetaldehyde (d) Acetic Acid

Q.11. The Pot of SHE is assumed as (1)
(a) Zero volt (b) 1 volt (c) 1.10 volt (d) None of these

Q.12. An anti Pyritic is (1)
(a) Quinine (b) Paracetamol (c) Luminal (d) Piperazine

Q.13. What are analgesics and Anti Pyritic drugs? Give one difference with example. (2)

Q.14. Show that in case of Ist order reaction, time required for 99% completion of reaction is twice the time required for the completion of 90% of reaction. (2)

Q.15. Explain Hardy Schulze rule. (2)

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Q.16. Draw a well labelled diagram for elector reforming of copper. (2)

Q.17. Draw structures of (1+1)

(a) P_4O_6 (b) X_eO_3

Q.18. Using valence bond theory predict shape and magnetic character of $[Nicl_4]^{2}$ (2)

Q.19. Complete reactions (1+1)

(i) $H_6H_5CHO + HCN \Longrightarrow$

(ii) $C_6H_5CHO + NH_2OH \Longrightarrow$

Q.20. Write short note on following (1+1)

(i) Coupling reaction

(ii) Schotten Baumann reaction

Q.21. (i) Why chloroform is stored in dark coloured bottles ?

(ii) Write IUPAC name of tertiary butyl bromide. (1+1)

Q.22. (i) Derive an expression for the determination of molar mar of non volatile solute from relative lowering in vapour pressure.

(ii) Define the term azotrope. (2+1)

OR

How is HN_{03} is Manufactured by astwald process? Write the steps in valued (3)

Q.23. Explain why

(i) No chemical compounds of helium are known.

(ii) the majority of noble gas compounds are those of xenon.

(iii) Inter halogen compounds are more reactive than halogens. (3)

Q.24. (i) Write short note on Swarty reaction.

(ii) Why Haloarens are ortho and para directing in nature? (1+2)

Q.25. (i) Give the syntheses of nylon 66.

(ii) Give method of preparation of Taflon.

(iii) What does MMA stands for ? How is it prepared? (1+1+1)

Q.26. (i) What are anti pyritics ?

(ii) Define the term chemotherapy.

(iii) What is peptide linkage? (1+1+1)

Q.27. (i) Write the reaction involved in electrochemical theory of rusting.

(ii) Calculate molar conductivity at infinite dilution(Λ°_m) for Cav_2 and $mgle_2$ from following data : Λ° ($Scm^2\ mol^{-1}$): Ca^{2+} = 119.0, mg^{2+} =106.0, ce^{-} =76.3, SO_4^{2-} =160.0

(iii) What are the units of equivalent conductance ? (2+2+1)

OR

(i) Discuss the working of fuel cell giving reactions that are taking place in it.

(ii) A sugar syrup of weight 214.2g contains 34.2g of sugar (c12H22O11) calculate the mole fraction of sugar.

(iii) Under what condection Van't Haff's factor 'i' is equal to unity. (2+2+1)

Q.28. (i) Why do transition elements ?

(a) form alloys

(b) form inter stitcal compounds.

(c) form complexes.

(ii) What happens when acidified $K_2Cr_2O_7$ reacts with ?

(a) Potassium nitrite (KNo_2)

(b) Hydrogen sulphide (H_2S) (1+1+1+1+1)

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Q.29. (i) What are F centre ?

(ii) Define the term leaching.

(iii) What is molarity of pure water ?

(iv) What is gold number ?

(v) What are the units of K for 2nd order. (1+1+1+1+1)

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