Second year higher secondary model examination

Neyyattinkara cluster

Chemistry

Maximum marks 60 **Cool-off time :15 mins** **time : 2 hours**

☆General Instructions to Candidates:

- **There is cool-off time of 15 minutes in addition to the writing time.**
- **Use the 'Cool-off time' to get familiar with questions and to plan your answers.**
- **Read questions carefully before answering. Read the instructions carefully.**
- **Calculations, figures and graphs should be shown in the answer sheet itself.**
- **Electronic devices except non-programmable calculators are not allowed in the Examination Hall.**

☆ വിദ്യാർത്ഥികൾക്കുള്ള പൊതുനിർദ്ദേശങ്ങൾ

- നിർദ്ദിഷ്ട സമയത്തിന് പുറമെ **15** മിനിറ്റ് കൂൾ ഓഫ് ടൈം' ഉണ്ടായിരിക്കും.
- `കൂൾ ഓഫ് ടൈം' ചോദ്യങ്ങൾ പരിചയപ്പെടാനും ഉത്തരങ്ങൾ ആസൂത്രണം ചെയ്യാനും ഉപയോഗിക്കുക.
- ഉത്തരങ്ങൾ എഴുതുന്നതിന് മുമ്പ് ചോദ്യങ്ങൾ ശ്രദ്ധാപൂർവ്വം വായിക്കണ* * മുഴുവനും ശ്രദ്ധാപൂർവ്വം വായിക്കണം. കണക്ക് കൂട്ടലുകൾ,
- ഗ്രാഫുകൾ, എന്നിവ ഉത്തരപേപ്പറിൽ തന്നെ ഉണ്ടായിരിക്കണം
- ആവശ്യമുള്ള സ്ഥലത്ത് സമവാക്യങ്ങൾ കൊടുക്കണം.
- പ്രോഗ്രാമുകൾ ചെയ്യാനാകാത്ത കാൽക്കുലേറ്ററുകൾ ഒഴികെയുള്ള ഒരു ഇലക്ട്രോണിക് ഉപകരണവും പരീക്ഷാഹാളിൽ പാടില്ല.

Part I

Answer any 4 questions from 1 to 5 each carries 1 mark (4x1 = 4)

1. Among the following which solution shows negative deviation from ideal behavior

A, $HNO3 + H_2O$

B, Alcohol + H_2O

C, acetone+CS2

D, phenol+aniline

2. The common oxidation state of transition elements is —----
3. Some coordination compounds are colored due to ……
4. Give one chlorine containing insecticide.
5. The reagent which used in Clemmenson's reduction is……..

Part II

Answer 8 questions from 6 to 15, each carries 2 marks (8x2=16)

6. State Kohlrausch's law of independent migration of ions.
7. Differentiate order of molecularity of reaction.
8. Calculate the magnetic moment of **Sc^{3+}** using the spin only formula.
9. How will you prepare ethanol commercially.
10. Explain Williamson's synthesis.
11. Give a chemical test to distinguish the following compound with equation Propanal& propanone
12. Write the equation for the reaction of
    i) Acetone with hydrazine
    ii) Acetone with alcohol.
13. Give the Cis & trans isomers of [Pt (NH_3) Cl_2]
14. Aliphatic amines are more basic than ammonia give reason
15. Starch insoluble in water. give reason.

Part III

Answer any 8 questions from 16 to 25 each carries 3marks.

16. What you mean by colligative property. Name them
17. Explain the variation of molar conductivity with concentration for strong & weak electrolyte.
18. Answer the following.
    a) Define half life period.
    b) Derive half life period of first order reaction.
19. Describe the method of preparation of KMnO4 from its ore.
20. What are the postulates of Werner's Theory of co ordination compounds.
21. Differentiate SN1 & SN2 mechanism in haloalkanes.
22. Haloarenes are less reactive towards nucleophilic substitution reaction than haloalkanes.give reason.

23. Explain the following name reactions.
    I. Wolf – kishner reaction 2.Aldol – condensation
24. Account the following
    I. Aldehydes are more reactive than ketones.
    II. Chloro acetic acid is a strong acid than acetic acid.
25. How will you distinguish 1^o,2^o &3^o amines using Hinesberg test
26. Answer the following
    a) Vitamin C should be regularly supplied through diet. Give reason.
    b) Differentiate fibrous protein from globular protein with example.

Part IV

Answer any 4 questions from 27 to 31 each carries 4 marks.

27. Define henrys' law & explain its applications.
28. What are fuel cells? write the half cell reaction of fuel cell & its advantages
29. Answer the following
    a) Give arrhenius equation
    b) The rate of a chemical reaction doubles for an increase of 10K in absolute temperature from 300K. Calculate the activation energy, Ea. [R= 8.314 J/k/ mol, log 2 = 0.3010].
30. Draw the geometrical isomers of $[Pt\ Cl_2\ (CN)_2]^{2+}$. Which among the isomers is optically active give reason?
31. How will you convert?
    a) Methanol -------> ethanol
    b) Phenol-------> salicylaldehyde
    c) Sodium phenoxide--> salicylic acid
    d) Phenol---------> benzene

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