Total Number of Questions : 23

Time : 2.00 Hours   Max. Marks : 100

1. Explain the curricular potentialities of various community Resources.   **(4 Marks)**

2. Discuss any four factors to be considered while integrating ICT in classroom practices.   **(4 Marks)**

3. Discuss how School of Relativism differs from Eclectic views in Philosophy.   **(4 Marks)**

4. Explain how teaching varies according to different levels of learner ?   **(4 Marks)**

5. How to conduct a Historical Research in education ?   **(4 Marks)**

6. Discuss the formal and informal community engagement practices an activities for
    establishing interrelationship between school and community.   **(6 Marks)**

7. Inclusive classrooms have become engaging learning environments with the use of ICT.
    Comment.   **(6 Marks)**

8. "Your Mental Health is everything" - Prioritize it. Comment on this statement.

    What strategies can you employed to support an individual with a mental health problem ?   **(6 Marks)**

9. Describe any six student centred teaching strategies.   **(6 Marks)**

10. What are the criteria that you would follow while preparing an Experimental Research in
    Education ?   **(6 Marks)**

11. Magnetite (Fe_3O_4) is a mineral contain Fe^{2+} and Fe^{3+} ions in its crystal lattice. Explain inverse
    spinal structure using Fe_3O_4 as an example.   **(3 Marks)**

12. "Organic compounds can be aromatic and anti-aromatic". Substantiate this statement using
    suitable examples.   **(3 Marks)**

13. A first order reaction takes 12 hours for completing 90% of the reaction. How many hours
    will it take to complete 80% of the reaction ? What is its half-life period ?   **(3 Marks)**

14. $[NiCl_4]^{2-}$ and $[Ni(CO)_4]$ are two species with same co-ordination number. Are both of them
    have same structure ? Explain the structure and magnetic property of both the species.
    Atomic Number of Ni = 28.   **(4 Marks)**

15. What is coupling reaction ? Explain Heck coupling.   **(4 Marks)**

16. How will CD and ORD help us in determining the absolute configuration of metal
    complexes ?   **(4 Marks)**

17. Which of the following compounds give Cannizzaro reaction and Aldol condensation ?   (4 Marks)

    a) CH_3CHO

    b) HCHO

    c) C_6H_5CHO

    d) CH_3CH_2CHO

    Write the mechanism of Aldol condensation using one of the above compounds.

18. How will you prepare pyridine from acetylene ? Pyridine will not undergo Friedel Crafts acylation.

    Why ? Write any four uses of pyridine.   (4 Marks)

19. Write notes on :   (4 Marks)

    a) Retro synthesis.

    b) Convergent synthesis.

20. What is transport number ? How will you find out the transport number using Hittorf

    Method ?   (4 Marks)

21. $N_2 + 3H_2 \underset{450^\circ C}{\overset{Fe/Mo}{\rightleftarrows}} 2NH_3 + Heat$ (4 Marks)

    Explain the influence of temperature and pressure in the industrial production of ammonia.

22. Which law gives the relation between atomic mass and specific heat of an element ? Give any one

    application of this law and quantum effect of it. Is this law true for Silicon at normal temperature

    and why ?   (4 Marks)

23. Supramolecular chemistry is receiving wide attention now-a-days. Explain the principle of

    supramolecular chemistry and its applications in our daily life.   (5 Marks)