

19. Define Ancient Monument and Archaeological sites and remains Act 1958?
20. Define J&K Ancient monuments and preservation act 1977 (samvath).

Annexure "A"

Syllabus for Conservation Assistant

Total Marks 120 **Time 2 Hours**

Part-I: 16 Marks

01. Definition of Museum, Museology and Museography.
02. History and development of Indian Museum.
03. Museum Collection.
 - a. Primary source
 - b. Secondary source
 - c. Documentation system
 - d. Catalogue
 - e. Exhibition
04. What is documentation system?
05. Museum and an educational research institution.
06. Communication policy of the Museum.
07. Importance of design of Museum gallery and Museum building.
08. Museum as an agency of non-formal education.

Part-II: 8 Marks

Delocalized Chemical bonding

Conjugation, Cross conjugation, rule of resonance, steric inhibition of resonance.

Aromaticity: Huckel rule and concept of aromaticity, Molecular orbital description of aromaticity and antiaromaticity, Relation between NMR and aromaticity. Annulenes (Two to more than ten-electronic system), Aromaticity of hetero annulenes and fullerenes (C-60). Homoaromaticity. Hyper conjugation: Explanation of hyper conjugative effect, isovalent and sacrificial hyper conjugation.

Part-III: 8 Marks

Stereochemistry:

Elements of symmetry, Chirality due to chiral centre, molecules with more than one Chiral centre, thero and erythron isomers optical activity in the absence of chiral carbon (biphenyls, allenes and spirans). Chirality due to helical shape. Enantiotropic and diastereotropic atoms, groups and faces.

Part-IV: 8 Marks

Reaction Mechanism/Structure and reactivity

Types of mechanisms. Types of reactions, thermodynamic and kinetic requirements.

Effect of structure on reactivity

Resonance and field effects, steric effect, quantitative treatment

Part-V: 8 Marks

Aliphatic Electrophilic substitutions

General mechanism of SE1, SE2 and SEiractions, Mechanism of reactions involving migration of double bond. Effect of substrate, leaving group and solvent on reactivity.

Aliphatic Nucleophilic substitutions

Mechanisms and stereochemical implications of SN2, SN1, SNIandneighbouring group participation (by double and single-bonds) reactions. Effect of substrate structure, attacking nucleophile, leaving group and solvent on the rates of SN1 and SN2 reactions.

Part –VI: 8 Marks

Elimination reactions:

Discussion of E1, E2, E1cB and E2C mechanisms. Effect of substrate structure base and the leaving group on reactivity. Competition between substitution and elimination reactions. Stereochemistry and orientation of E2 elimination. Mechanism and orientation in pyrolytic eliminations, Shapiro reaction.

Part-VII 8 Marks

Aromatic Electrophilic Substitution

The arenium ion mechanism, orientation and reactivity, energy profile diagrams. The ortho/ratio, ipso attack. Orientation of substitution in benzene rings having more than one substituents. Orientation in other ring systems. Mechanisms of diazonium coupling, Vilsmier-Haack and Gattermann-Koch reactions and Fries rearrangement.

Part-VIII: 8 Marks

Aromatic Nucleophilic substitution

Discussion of different mechanism (SN1;SNAr, Benzyne and srn!) Structure reactivity relationships. Effect of leaving group and attacking nucleophile. Mechanisms of Von-Richter, Sommelet-Hauser and Smiles arrangements and Chichibabin reaction.

Part-IX: 8 Marks

Free Radical Substitution

Free radical substitution mechanisms. Mechanism at an aromatic substrate, neighboring group assistances, reactivity for aliphatic and aromatic substrates. Reactivity in the attacking radical. Effect of solvent on reactivity. Allylic alogenations (NBS), oxidation of aldehydes to carboxylic

acids, auto-oxidation, coupling of alkynes and arylation of aromatic compounds by diazonium salts, Sandmayer reaction, free radical rearrangement and Hunsdiecker reaction.

Part-X: 24 Marks

I). Preventive conservation in terms of:

1. Light
2. Insects
3. Fungus
4. Atmosphere
5. Pollution

II). Curative Conservation

1. Conservation of Paper Material-Currency notes, judicial papers, manuscripts in museums.
2. Care of bronze, brass and other alloy artefacts and metal objects like iron, copper and zinc etc.
3. Conservation of terracotta.
4. Conservation of mannequins using base materials.
5. Basic steps in conservation of paper machie artefacts/objects.
6. Conservation of animas in aquatic medium using alcoholic medium.

Part-XI: 16 Marks

General Knowledge

1. What is Preventive conservation?
2. What is curative conservations?
3. What is conservation
4. What is archaeology?
5. What is archives? When was achieves established in J&K.
6. What is museum?
7. When was SPS museum Srinagar established/Give history?
8. When was Dogra art museum Jammu established?
9. What is documentation?
10. How is Identification of Antiquities made?
11. What types of antiquities were recovered from the Harwan during the course of excavation?
12. When was Burzaham excavated and what type of antiquities were recovered?
13. How many periods are traced in Burzaham? Give their details period wise.
14. When is world Heritage Day celebrated?
15. When is world heritage week celebrated?
16. When was International museum day celebrated?
17. What is Indian treasure true act 1978.
18. What is Antiquities and Art Treasure Act 1971 AD.