KATHMANDU UNIVERSITY
End Semester Examination [C]
December, 2018

Marks Scored:

Level : B.Sc./B.Pharm.
Year : II

Course : CHEM 203
Semester: II

Exam Roll No. :

Time: 30 mins.

F.M. : 20

Registration No. :

Date DEC 30 2018

SECTION "A"

[20 Q.×1=20 marks]

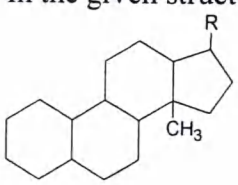
Mark X on the most appropriate answer.

1. Cationic polymerization is initiated by.....
[ ] a free radical [ ] an acid [ ] a base [ ] a peroxide

2. Which of the following is the **correct order of** basic strength?
[ ] Pyridine > Piperidine > Pyrrole
[ ] Pyrrole > Pyridine > Piperidine
[ ] Piperidine > Pyrrole > Pyridine
[ ] Piperidine > Pyridine > Pyrrole

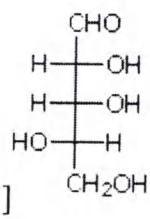
3. Carbony group is converted to alkene by.....reaction
[ ] Aldol condensation [ ] Wittig reaction
[ ] Claisen condensation [ ] Gabriel phthalimide synthesis

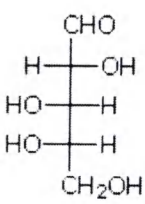
4. In the given structure angular-R group is present at..... position

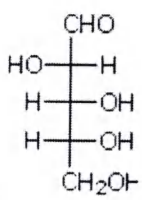


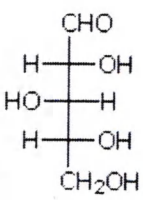

[ ] 11 [ ] 14 [ ] 17 [ ] 19

5. Which of the following gives an optically inactive aldaric acid on oxidation with dilute nitric acid?

[ ] 


[ ] 


[ ] 

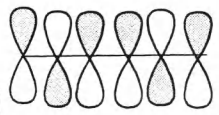
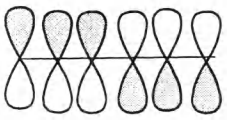
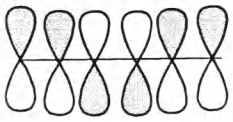
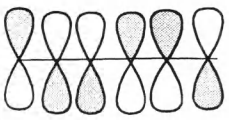

[ ] 


6. Inverted sugar is
[ ] mixture of D-(+)- glucose & (+)- Sucrose
[ ] mixture of D-(+)- glucose & D-(-)- fructose
[ ] D-(-)- fructose & (+)-lactose
[ ] mixture of (+)- Sucrose & D-(-)- fructose

7. Sanger's reagent, 2,4-dinitrofluorobenzene, reacts with which functional groups in a peptide?
[ ] free amino groups
[ ] the phenolic hydroxyl group in tyrosine
[ ] the sulfide group of methionine
[ ] the aromatic heterocyclic rings of histidine and tryptophan

8. Hydrolysis of methylated amylopectin yields .....% of 2,3,4,6-Tetra-O-methyl-D-glucose.
[ ] 90 [ ] 5 [ ] 1 [ ] 0.3

9. The orbital of the 1,3,5-hexatriene involved in the Photochemical electrocylic reaction is

[ ]  [ ]  [ ]  [ ] 

10. Acetoacetic ester is .....
[ ] alpha-hydroxyaldehyde [ ] beta- keto ester
[ ] beta-keto acid [ ] alpha-ketoaldehyde

11. Which of thefollowing statement is **not true** about Diels-Alder reaction?
[ ] diene must have S-cis conformation.
[ ] with respect to dienophile the addition is syn-addition.
[ ] The exo –addition is more preferable.
[ ] It is [4+2] cycloaddition reaction.

12. Which is not true about Anomers?
[ ] are diasteromers [ ] differ the configuration at C1
[ ] undergo mutarotation in aqueous solution. [ ] have non-cyclic structure

13. An apoenzyme is
[ ] Non peptide portion of the enzyme [ ] peptide portion of the enzyme
[ ] metal ion associated with enzyme. [ ] an organic cofactor

14. For the cycloaddition reaction where the number of pai electron involved is 8, the photochemical reaction occurs in.....mode.
A. antra , antra B. antra, supra C. supra,antra D. supra,supra
[ ] A& B correct [ ]B& C correct [ ] C& D correct [ ]D& A correct

15. Niacin is
[ ] 2-Pyridinecarboxylic acid [ ] 3-Pyridinecarboxylic acid
[ ] 4-Pyridinecarboxylic acid. [ ] 2,3-Pyridinedicarboxylic acid

Fill in the blanks.

16. The polyhydroxy alcohol derivative of the aldose is known as.....

17. Pyrrolidine has a the molecular formula as.....

18. The transfer constant in the polymerization process is expressed as.....

19. Celloboise is hydrolysed by the enzyme.....

20. The hydrogen ion concentration of the solution in which aparticular amino acid does not migrate under the influence of an electric field is called.....

DEC 3 0 2018

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SECTION "B"

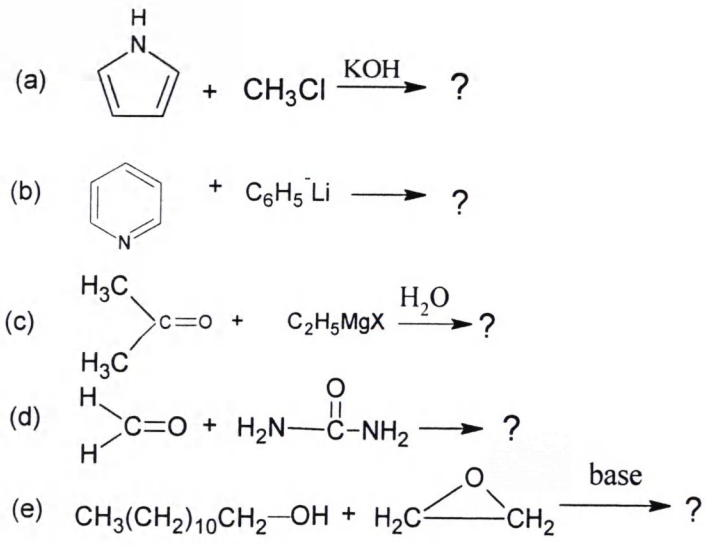
*Attempt ALL questions*

1. Give the mechanism for the following reactions. [4×2.5=10]
   a. Cross –Aldol condensation
   b. Claisen condensation.
   c. Wittig reaction
   d. [2+2] cycloaddition reaction on photochemical condition.

2. Explain the following statements. [4×2.5=10]
   a. [1,3] carbon shifts occurs with inversion of configuration
   b. Nucleophilic substitution in Pyridine is favorable at 2&4-position.
   c. Sucrose is non reducing sugar.
   d. [4+2]cycloaddition occurs in supra,antra or antra,supra mode in photochemical process.

3. Explin the following. [4×2.5=10]
   a. Cleanig action of soap
   b. steroids
   c. Electrophoresis
   d. Space network polymers

4. Give the product/s of the following reactions. [5×1=5]




5. Write short notes: [4×2.5=10]
   a. Terminal residue analysis of proteins
   b. Structure of amylopectine.
   c. Biosynthesis of fatty acid.
   d. Cyclic structure of D-(+) –glucose

6. Give the chemical reactions invoved in the following process. [5×2=10]

a. Reaction of Lactose with Phenylhydrazine.
b. Synthesis of aminoacids by phthalimidomalonic ester method.
c. Polymerization between Phenol and formaldehyde.
d. Reaction of 1,4 dibromobutane with Sodiumsulphide on heating
e. Conversion of an aldopentose to alohexose .