

KATHMANDU UNIVERSITY
End Semester Examination
February/March, 2019

Marks Scored:

Level: B.E./B.Tech./B. Pharm.
Year : II

Course : CHEM 201
Semester : I

Exam Roll No. :

Time: 30 mins.

F. M. : 20

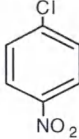
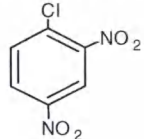
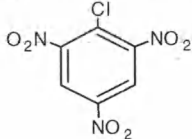
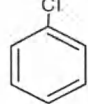
Registration No.:

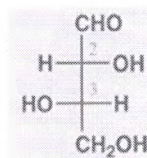
Date **12 MAR 2019**

SECTION "A"

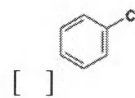
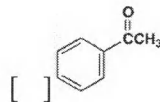
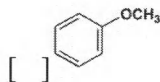
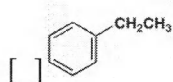
[20 Q. × 1 = 20 marks]

Choose and mark [X] the most appropriate answer.

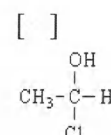
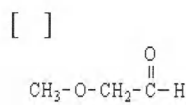
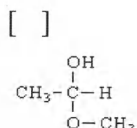
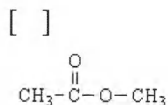
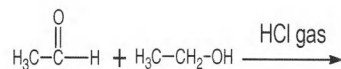
- Which of the following solvent is highly favorable for the SN1 reaction?
 Water Ethanol
 Dimethylsulfoxide Trifluoroacetic acid
- A optically active compound has specific optical rotation -8.5° . An ethanol solution of it displays a rotation of -17° in a 5cm polarimeter tube. What is the concentration of the solution?
 2g in 100mL 4g in 100mL 6g in 100mL 8g in 100mL
- Which of the following statements correctly describe(s) E1 reactions of alkyl halides (RX)?
A. Rate = $k[\text{base}]$ B. Rate = $k[\text{base}][\text{RX}]$
C. Rate = $k[\text{RX}]$ D. Rearrangements are sometimes observed.
 A and B C and D A and D A only
- The most reactive substrate towards nucleophilic aromatic substitution is
    
- Which of the following reaction proceeds with anti- Markovnikov's orientation?
a. Oxymercuration-demercuration b. Hydroboration-oxidation
c. Free radical polymerization of alkenes. d. Dimerization of alkenes
 ab bc ca d
- A carbonyl compound reacts with HCN in acidic condition to give
 Hemiacetal Semicarbazone
 Cyanohydrine Chlorohydrine
- Which is the correct assignment of chirality at C2 and C3 of the following molecule?
 2S,3S 2R,3R 2S,3R 2R,3S



8. Which is least reactive in electrophilic substitution?



9. What is the major product obtained from the following reaction?



10. Which of the following statement is not true about free radical Mechanism?

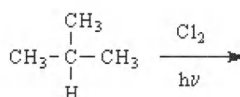
- It is a chain reaction
- Reaction is initiated by the generation of free radicals
- Finally the propagation steps occur
- It requires heat /light energy

11. Which statements support the idea that benzene contains delocalized electrons?

- I. It undergoes substitution rather than addition reactions.
- II. Its enthalpy change of combustion is greater than its enthalpy changes of hydrogenation.
- III. All its carbon-carbon bonds are the same length.

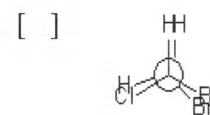
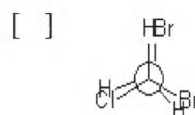
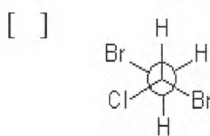
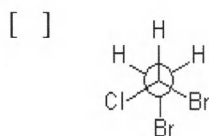
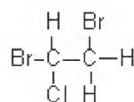
- I and II only
- I and III only
- II and III only
- I, II and III

12. How many dichloro isomers can be obtained from the following reaction?



- 1
- 2
- 3
- 4

13. Which of the following Newman projections shows the most stable conformation of the following compound?



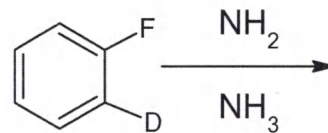
14. Phenol is an ortho para directing because the hydroxyl group
 increases the electron density at meta position favouring the nucleophilic attack
 increases the electron density at meta position favouring the electrophilic attack
 increases the electron density at O/P position favouring the nucleophilic attack
 increases the electron density at O/P position favouring the electrophilic attack
15. What is the order of reactivity of the following alkenes towards electrophile?
 III > II > I I > II > III
 II > III > I II > I > III



Fill in the blanks.

16. Product/s of the reaction is/are

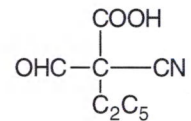
.....



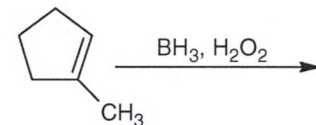
17. The order of reactivity of alkylhalides (R-F, R-Cl, R-Br and R-I) in SN2 reaction is

.....

18. According to sequence rules, the priority order of the substituents across the chiral carbon in the given compound is.....



19. The major product/s of the given reaction is.....



20. Name of the given compound.....

