2021/03

B.Sc. CHEMISTRY
THIRD SEMESTER
PHARMACEUTICAL CHEMISTRY
BSC-306A [SPECIAL REPEAT]

[USE OMR FOR OBJECTIVE PART]

Duration : 1 hr. 30mins. **Full Marks : 35**

Objective

Time : 10 mins. **Marks : 10**

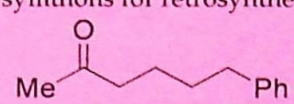
Choose the correct answer from the following: ***1X10=10***

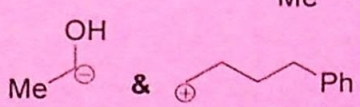
1. Main excretory route of drugs is:
   a. Kidney
   b. Lungs
   c. Bile duct
   d. Intestine

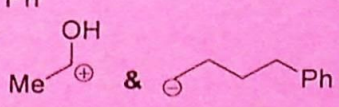
2. Which of the following drugs **do not** act by inhibition of the enzymes COX1 and COX2 for prostaglandin production?
   a. Aspirin
   b. Ibuprophen
   c. Paracetamol
   d. None of these

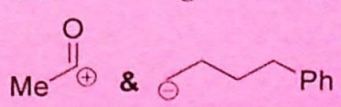
3. The following reaction is a biological degradation process of glucose, which is known as
   $C_6H_{12}O_6 + 2ADP + 2\,Pi + 2NAD^+ = 2CH_3COCOO^- + 2\,ATP + 2\,NADH + 2H_2O + 2H^+$
   a. Kreb's cycle
   b. TCA Cycle
   c. Citric acid cycle
   d. Glycolysis

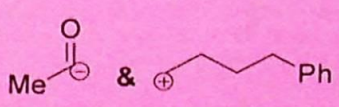
4. The most effective pair of symthons for retrosynthetic analysis of the following molecule



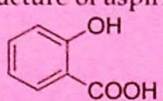
a. 

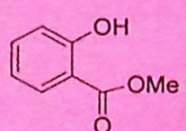
b. 

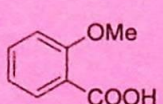
c. 

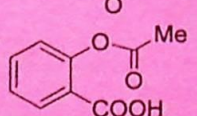
d. 

5. Structure of aspirin is:

a. 

b. 

c. 

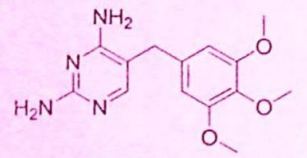
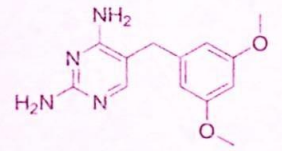
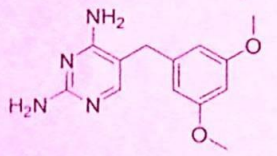
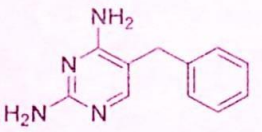
d. 

6. The agent which is capable of either to stop the growth or to kill the bacteria is:
   a. Antipyretic
   b. Analgesics
   c. Antibiotics
   d. All of these

7. Which one among the following Penicillin group is less sensitive to acid?
   a. Penicillin I
   b. Penicillin II
   c. Penicillin F
   d. Penicillin V

8. Among the following options which stereoisomer of chloramphanicol is active?
   a. D(-)-threo
   b. D(-)erythro
   c. L(-)threo
   d. L(-)erythro

9. Benzodiazepine belongs to the category of:
   a. Antibacterial agent
   b. Antipyretic agent
   c. Antifungal agent
   d. None of these

10. The correct structure of trimethoprim is:
   a. 
   b. 
   c. 
   d. 

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Descriptive

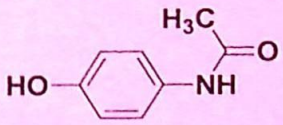
Time : 1 hr. 20 mins. **Marks : 25**

[Answer question no.1 & any two (2) from the rest]

1. a) Write one example and uses of CNS based drug. 2
   b) Compare and contrast between aerobic and anaerobic fermentation. 3

2. a) Write the synthetic strategy for the antibiotic Chloramphenicol. 5
   b) What do you mean by retrosynthetic analysis? Give the retrosynthetic analysis of paracetamol. 2+3=5

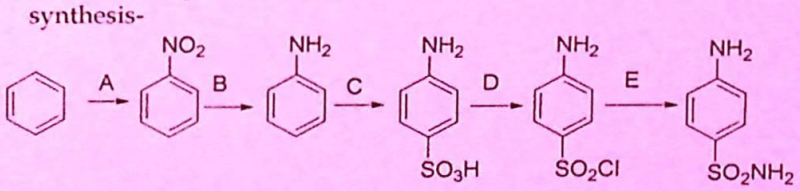
3. a) Predict suitable **synthons,** hence the reagents, for the retrosynthesis of following target molecule: 3



   b) How ethanol is obtained commercially by fermentation of molasses? 4
   c) Write down the chemistry of formation of ethanol from pyruvate, formed during fermentation from glucose. 3

4. a) Write the mode of action along with one medicinal uses of diazepam. 3
   b) Write the structure, synthesis and one uses of Ibuprofen. 5
   c) What happen when penicillin is subjected to acid hydrolysis? 2

5. a) Write the mode of action and one uses of Trimethoprim. 3
   b) Write the synthesis and one uses of Aspirin. 2
   c) Write the reagents A, B, C, D and E used in the following drug synthesis- 5



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