QP CODE: 20100425

20100425

Reg No : .....

Name : .....

BSc DEGREE (CBCS) EXAMINATION, MARCH 2020

Sixth Semester

Core course - CH6CRT10 - ORGANIC CHEMISTRY - IV

B.Sc Chemistry Model I,B.Sc Chemistry Model III Petrochemicals,B.Sc Chemistry Model II Industrial Chemistry

2017 Admission Onwards

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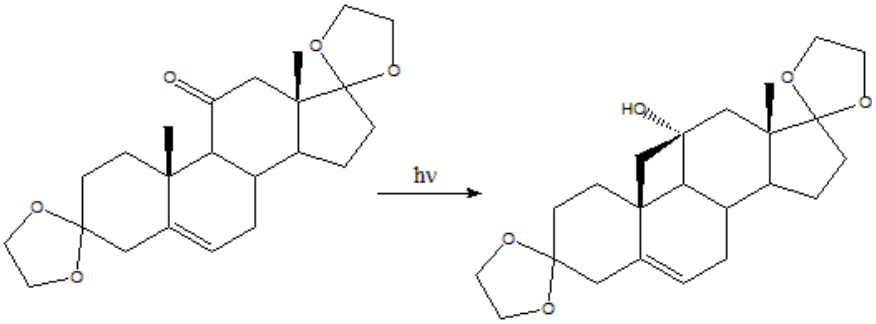
Time: 3 Hours Marks: 60

Part A

*Answer any **ten** questions.*

*Each question carries **1** mark.*

1. In which class carotenoids belong to?
2. What are compound lipids? Give examples.
3. Give an example of an unsaturated fatty acid present in oils and fats.
4. What are the functions of the female sex hormone?
5. Write the name of the N -terminal residue in the given tripeptide: Gly-Ala-Phe
6. What is the cause of denaturation of proteins?
7. Write an example for reductase enzyme.
8. Name two molecular receptor.
9. Identify the named reaction



10. State Beer-Lambert's law.
11. Define coupling constant.

12. How many 1H NMR signals are observed in following compounds? (i) dimethyl ether (ii) methyl acetate.

(10×1=10)

Part B

*Answer any **six** questions.*

*Each question carries **5** marks.*

13. Establish nicotine as a derivative of pyridine by chemical reactions.
14. Explain amphoteric detergents with suitable examples.
15. Write the structure and biochemical functions of Vitamin B2.
16. Write a note on the classification of amino acids.
17. Write the differences between DNA and RNA.
18. Write a note on enzyme inhibitors.
19. Explain molecular recognition in DNA.
20. Differentiate between photochemical and thermal reactions.
21. An organic compound with molecular formula C7H8O can be easily oxidised to give an aldehyde . The compound exhibits following spectral data: UV : λ max= 255nm, ε max=202; IR data: 3402 (s,broad), 3065 (w), 2288 (m),1499 (w,sharp), 1455(m) cm-1; NMR data: δ= 7.26 (5H, singlet); 4.6 (2H,singlet); 3.9(1H, singlet).

(6×5=30)

Part C

*Answer any **two** questions.*

*Each question carries **10** marks.*

22. Explain the vulcanization technique? What structural changes can be made to natural rubber by this technique.
23. Explain the different end group analyses used for the determination of primary structure of proteins.
24. Write a note on the role of DNA in protein biosynthesis. Explain genetic coding.
25. (i) How can you distinguish between inter and intra molecular hydrogen bonding using IR spectroscopy? (ii) The liquid film in IR spectrum of pentan-2,4-dione shows absorption bands at 1600 cm-1 ; 1700 cm-1 and a very broad band streching from 2400-3400 cm-1 which is unchanged on dilution. What are these bands?

(2×10=20)