



Registration Number:

Date & Session:

ST. JOSEPH'S UNIVERSITY, BENGALURU -27
M.Sc. CHEMISTRY – 4th SEMESTER
SEMESTER EXAMINATION: APRIL 2024
(Examination conducted in May / June 2024)
OCH 0222: Medicinal Chemistry
(For current batch students only)

Time: 2 Hours

Max. Marks: 50

This paper contains TWO printed pages and THREE parts.

PART-A

Answer any EIGHT of the following:

8 X 2 = 16

1. What is the target for the antibiotic action of tetracyclines?
2. How do reverse transcriptase inhibitors such as zidovudine selectively target viruses instead of host cells?
3. Distinguish between analgesic and antipyretic medications.
4. What are the therapeutic differences between CNS depressants and antidepressants?
5. Differentiate between antiarrhythmic agents and antihypertensive drugs?
6. Mention any two characteristics of a soft drug.
7. Define isosterism and bioisosterism.
8. What is the relation between therapeutic index and safety.
9. Mention any two advantages of solid phase synthesis.
10. Explain the term NCE and NDA

PART-B

Answer any TWO of the following:

2 X 12 = 24

11. (a) Discuss the involvement of organoplatinum compounds as alkylating agents in cancer chemotherapy, elaborating on their mechanism of action and providing examples of notable compounds in this class.
(b) Examine the mechanisms of activation and therapeutic uses of carrier-linked prodrugs, bio precursor prodrugs, and mutual prodrugs in pharmaceutical development, highlighting their differences and advantages. Support your discussion with relevant examples. (6+6)
12. (a) Describe how DPP-4 inhibitors and incretin mimetics help reduce blood glucose levels in individuals with type 2 diabetes?
(b) Classify soft drug and explain any three with examples. (6+6)
13. (a) Classify receptors. Explain the mechanism of ligand gated ion channel receptors.
(b) Explain any four methods to render drug more resistance to metabolism.
(c) Explain different types of peptidomimetics. (4+4+4)

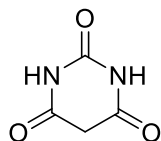
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PART-C

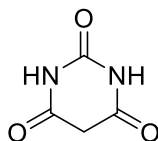
Answer any TWO of the following:

2 X 5 = 10

14. Mr. Smith, a 45-year-old male, is admitted to the hospital with acute agitation and aggression. He has a history of schizophrenia and is currently non-compliant with his antipsychotic medication. Develop a pharmacological management plan for Mr. Smith, incorporating antipsychotic drugs. Evaluate the choice of antipsychotic agent, considering its efficacy, side effect profile, and potential for rapid control of symptoms.
15. (a) Industrial workers working in dynamite factories (exposed to nitrates) developed headache, dizziness on Monday and by Friday they would overcome this. This condition is known as 'Monday disease'. Evaluate the physiological mechanisms underlying the development of 'Monday disease'.
- (b) Compound A has no activity however B has CNS depressant activity. Explain the phenomena.



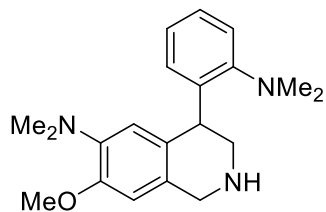
A



B

(2+3)

16. The below mention hypothetical drug need to get absorb in stomach. Explain where is the maximum possibility of getting absorbed. Suggest possible change in the structure for better absorbance in the stomach. Justify the answer.



.....THE END.....