

Question Paper

Exam Date & Time: 22-May-2023 (10:00 AM - 01:00 PM)



MANIPAL ACADEMY OF HIGHER EDUCATION

Instructions: Answer ALL questions.

Pharmacology-2 [PHA 3.1T-S2]

Marks: 70

Duration: 180 mins.

Section A

Answer all the questions.

Long Answer Questions (3 x 10 marks = 30 marks)

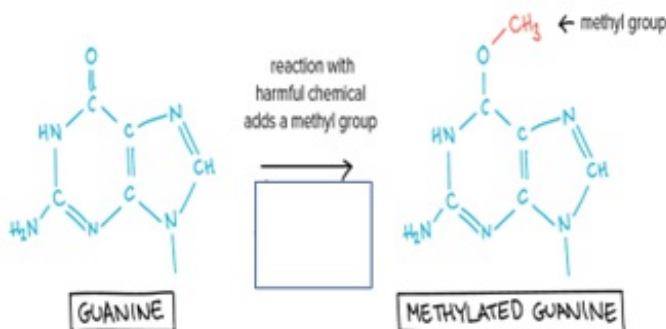
- 1) You are considering the treatment of a leukemic patient with TNF. Upon further analysis, you determine that the leukemic cells have an inactivating mutation of caspase 8. Will treatment with TNF be an effective therapy for this patient? Explain the pathway involved in TNF to induce apoptosis and how this mutation affects the therapeutic options. (10)
- 2) Classify drugs used to interfere with platelet function. Describe their mechanisms of action. (4+6) (10)
- 3) Discuss the bacterial protein synthesis and with examples, explain how the various antibacterial drugs inhibit it. (10)

Section B

Answer all the questions.

Short Answer Questions (6 x 5 marks = 30 marks)

- 4) Observe the type of DNA damage shown in the below figure. Explain the DNA repair mechanism for such type of damage. (5)



- 5) Summarize the source, signs, symptoms, and management of heavy metal poisoning. (5)
- 6) Briefly write the mechanism of action and toxicities of spironolactone. (5)
- 7) With suitable examples, classify fluoroquinolones and explain their mechanism of action. (2+3) (5)
- 8) A drug named prednisone was prescribed to a patient who had undergone bone marrow transplantation. Justify the rationale and mechanism of prednisone for this therapeutic use. (5)
- 9) A patient with Hodgkin lymphoma underwent monotherapy with doxorubicin at a dose of 60 to 75 mg/m² IV once on the first day of a 21-day cycle and subsequently a maximum cumulative dose of 500 mg/m² was administered to the patient. After a week patient developed chest pain and ECG of the patient showed ST segment elevation with elevated serum troponin levels. Can you (5)
 - A) Identify the target organ affected in this patient? Justify your answer.
 - B) What could be reason for the target organ toxicity?
 - C) Suggest a approach for the management of patient condition?

D) Is the toxicity preventable? If so, how it could be done?

Section C

Answer all the questions.

Give Reasons for the Following (5 x 2 marks = 10 marks)

- 10) Justify the statement with the appropriate reason: *Salmonella typhi* is naturally resistant to penicillin. (2)
- 11) Give reasons for the superinfection due to prolonged use of broad-spectrum antibiotics. (2)
- 12) Critically assess and write the various aspects of combining zidovudine and stavudine for anti-HIV therapy. (2)
- 13) Give the reason why aerobic organisms are resistant to metronidazole. (2)
- 14) Rationalize between leucovorin and folic acid to combine with methotrexate. (2)

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