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SEAT No. \_\_\_\_\_

{ } SARDAR PATEL UNIVERSITY  
 M.Sc. (Integrated) Biotechnology (IGMBT), 10<sup>th</sup> Semester Examination  
 Saturday 23<sup>rd</sup> March 2019  
 10:00 A.M to 1:00 P.M  
 PS10IGMB3: Drug design and Development

Total Marks: 70

Note: (1) Figures to the right indicate marks.  
 (2) Draw a neat and labeled diagram, wherever necessary.

**Q. 1 Choose the most appropriate answer from the four alternatives given:**

[8]

- (1) Which of the following drugs isolated from fungal metabolite:  
 (a) Cephalostatin (b) artemisinin (c) lovastatin (d) none of the above
- (2) Epibatidine isolated from:  
 (a) puffer fish (b) Solanaceous plants in ancient Greece. (c) Skin extracts of Ecuadorian poison frog. (d) none of the above
- (3) Which of the following drug use to treat rheumatoid arthritis :  
 (a) teriparatide (b) cislosporin (c) etanercept (d) all of the above
- (4) Which of the following drug used for the antifreeze poisoning : (a) ethylene glycol (b) alcohol (c) methylene glycol (d) All of the above
- (5) Metoclopramide is administered with Analgesic in the treatment of :  
 (a) Fever (b) Diabetes (c) Migraine (d) Bleeding disorders
- (6) Which of the Following are examples of Prodrug : (a) Levodopa (b) Hexobarbitone (c) Candoxatril (d) All of them
- (7) Toxicity of the molecules can be predicted using:  
 (a) QSAR (b) QSTR (c) QSER (d) QSPR
- (8) A second drug is administered along with the principal drug, this approach is known as:  
 (a) Sentry drug (b) Prodrugs (c) Orphan drug (d) None.

[14]

**Q-2 Answer any SEVEN from the following:**

- (1) Differentiate: LD<sub>50</sub> and ED<sub>50</sub>.
- (2) Pharmacopore.
- (3) Affinity Screening
- (4) Differentiate: Transition state analogues and suicide substrate
- (5) Write brief account on steric shields.
- (6) Prodrug
- (7) Enlist the various methods used for drug targeting.
- (8) What is orphan drug?
- (9) Sentry drugs

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(PTO)

- Q.3 (a)** Discuss target specificity and selectivity between species in detail. [6]  
**(b)** Write detail note on drug discovery from animal, plant and microbial source. [6]

**OR**

- (b)** How do bioassay helps in identifying the lead molecule. Write detail note on affinity Screening. [6]

- Q.4 (a)** Describe the role of isoenzyme as a drug with suitable example. [6]  
**(b)** Discuss role of monoclonal antibodies in medicinal chemistry in brief. [6]

**OR**

- (b)** Explain mechanism of action of rennin inhibitor in detail. [6]

- Q.5 (a)** Discuss any three method used to increase stability of the drug. [6]  
**(b)** How prodrugs are used to mask toxicity and side effects? Discuss with suitable examples. [6]

**OR**

- (b)** How drug can be made more resistant to chemical and enzymatic degradation? [6]

- Q.6 (a)** Write detail account on toxicity testing for new drug. [6]  
**(b)** What is patent? Explain roles of different agency involve in regulatory affairs. [6]

**OR**

- (b)** Write brief account on chemical development process for development of new drug. [6]

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(2)