

STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI 600 086
(For candidates admitted from the academic year 2023 – 2024)
M.A / M.Com / M. Sc. DEGREE EXAMINATION, APRIL 2024
BIOINFORMATICS
SECOND SEMESTER

COURSE : ELECTIVE
PAPER : COMPUTER AIDED DRUG DESIGN
SUBJECT CODE : 23BI/PE/CD23
TIME : 3 HOURS **MAX. MARKS: 100**

Q. No.	SECTION A (10 x 1=10)	CO	KL
	All questions to be answered (Objective type)		
1	What is the primary goal of drug development?	CO1	K1
2	What is the purpose of preclinical phase studies in drug development?	CO2	K2
3	Name one ethical consideration in drug discovery.	CO1	K1
4	What are small molecules in drug design?	CO2	K2
5	Give an example of a database used for retrieving protein structures.	CO1	K1
6	What is the role of ligand-based drug design in drug discovery?	CO2	K2
7	Expand FDA.	CO1	K1
8	Name a commonly used chemical database for drug discovery.	CO2	K2
9	What does ADME stand for in pharmacokinetics?	CO1	K1
10	Define pharmacodynamics.	CO2	K2
Q. No.	SECTION B (10 x 2= 20)	CO	KL
	Answers in about 50 words		
11	List the main phases of drug discovery?	CO3	K3
12	Explain the role of regulations in drug discovery.	CO4	K4
13	State the role of IND.	CO3	K3
14	How do computational inferences contribute to target discovery and validation?	CO4	K4
15	Define active site.	CO3	K3
16	Explain the drug targets.	CO4	K4
17	Discuss the significance of natural products and their analogues in screening lead molecules.	CO3	K3
18	Comment on Lipinski' rule.	CO4	K4
19	What is scoring in molecular docking?	CO3	K3
20	Explain how molecules are scored and evaluated in molecular docking studies.	CO4	K4
Q. No.	SECTION C (4 x 10= 40)	CO	KL
	Answer in about 600 words - Internal choice		
21	a) Discuss the significance of each phase in the drug discovery process. OR b) Analyze the impact of FDA regulations on drug development.	CO4	K4

22	a) Evaluate the effectiveness of Indian regulatory systems in ensuring drug safety and efficacy. OR b) Justify the need for ethics in drug discovery studies	CO5	K5
23	a) Explain how computational methods aid in target discovery and validation in drug discovery. OR b) Compare different databases used for drug target identification and retrieval of protein structures.	CO4	K4
24	a) Comment on different file formats. OR b) Evaluate the utility of PubChem and Drug Bank databases for drug discovery research.	CO5	K5
Q. No.	SECTION D (2x 15=30) Answer any TWO questions in about 1200 words	CO	KL
25	Explore the challenges and opportunities associated with the changing landscape of drug development with a brief description on the timeline and phases in drug development.	CO5	K6
26	Critically analyze the ethical implications of drug discovery in relation to vulnerable populations.	CO5	K6
27	Evaluate the potential impact of molecular docking studies in rational drug design and lead optimization.	CO5	K6
28	Substantiate the importance of pharmacokinetics and pharmacodynamics in drug design.	CO5	K6
