STELLA MARIS COLLEGE (AUTONOMOUS) CHENNAI –600 086
(For candidates admitted from the academic year 2015 – 16 & thereafter)

SUBJECT CODE: 15BI/PC/BA44

M. Sc. DEGREE EXAMINATION, APRIL 2018
BIOINFORMATICS
FOURTH SEMESTER

COURSE : CORE
PAPER : ADVANCES IN BIOINFORMATICS
TIME : 3 HOURS **MAX. MARKS: 100**

SECTION – A

ANSWER ALL QUESTIONS **(20 X 1=20)**

1. ___ plays a key in developing personalized medicines.
2. ____, ____ and ____ are the enzymes involve in modifying the drugs at phase I metabolism.
3. What are the types of drug toxicity?
4. ICH developed safety guidelines to uncover potential risks for ___, ____ and ____.
5. Name few chemical structure drawing packages.
6. SMILES Stands for ___.
7. Chemical hashed fingerprint are mostly used for ____ & ____.
8. ___ and ___ are mostly used co-efficient for molecular similarity and diversity analysis.
9. What are the two major open source variant calling programs available to bioinformatics community?
10. Ion semiconductor sequencing utilizes the release of ___ ions to detect the sequence of a cluster.
11. What are the run types exist in NGS?
12. What are the three major sequencing platforms available for NGS?
13. GEO is the archive of ____, ____ and ____.
14. MAML is used for ____.
15. What is competitive hybridization?
16. Name few challenges in microarrays and bioinformatics.
17. CRAN stands for ___.
18. __ and __ symbols are used for adding subscript and superscript in R language.
19. Write the command to save graphics in PDF file format.
20. R is case sensitive. Say true or false.

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SECTION – B

ANSWER ANY FOUR QUESTIONS. EACH ANSWER SHOULD NOT EXCEED 500 WORDS. ALL QUESTIONS CARRY EQUAL MARKS. DRAW DIAGRAMS WHEREVER NECESSARY (4 X 10 = 40)

21. Explain about pharmacokinetics and metabolism.
22. What are the set of rules followed in writing canonical representation of a chemical molecule?
23. Write about molecular descriptors and its types.
24. Give a short note on Data analysis in NGS.
25. What is microarray? Explain its types.
26. Explain MAMLand visualizing microarray data.
27. How to create objects and assign values using R programming.

SECTION – C

ANSWER ANY TWO QUESTIONS. EACH ANSWER SHOULD NOT EXCEED 1200 WORDS. ALL QUESTIONS CARRY EQUAL MARKS. DRAW DIAGRAMS WHEREVER NECESSARY (2 X 20 = 40)

28. Explain in detail about molecular similarity and diversity.
29. Describe NGS in detail.
30. Give a detailed note on types of microarray and its data management.
31. Write a note on graphics usage in R programming.

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