



PG – 537

IX Semester M.Sc. (Integrated Course) Degree
Examination, Dec. 2017/Jan. 2018
(Semester Scheme)
BIOLOGICAL SCIENCES
IBS901 : Systems Biology

Time : 3 Hours

Max. Marks : 80

Instruction : Illustrate wherever necessary.

SECTION – A

1. Explain/Define **any ten** of the following in **three to four** sentences : **(10×2=20)**
- a) Southern blotting
 - b) SML
 - c) Perturbation
 - d) Pyruvate dehydrogenase
 - e) Glycolysis
 - f) In silico modeling
 - g) Metabolic networks
 - h) Stress response
 - i) Allosteric enzymes
 - j) Proteomics
 - k) Gene regulatory networks.

SECTION – B

- Write a critical notes on **any five** of the following : **(5×6=30)**
- 2. Signal transduction pathways.
 - 3. Regulation of gluconeogenesis.
 - 4. Micro arrays.

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5. Neural networking systems.
6. Tryptophan synthase.
7. Factors influencing enzyme activity.
8. Reverse-engineering of gene regulatory networks.
9. Synthetic genomics.

SECTION – C

Answer **any two** of the following :

(2×15=30)

10. Give an account on different models for enzyme regulation.
 11. Discuss the role of proteomics in system biology.
 12. Explain the methods for prediction of protein-protein interaction and functions.
 13. Discuss the role of bioinformatics in drug and vaccine designing.
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