PG (CBCS) ODD SEMESTER EXAMINATION, 2022

LIFE SCIENCE & BIOINFORMATICS

3rd Semester

COURSE NO. LISBCC – 304(Z)

(Special Paper)

Full Marks : 70

Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

(Answer all questions from any one option)

Option A : (Molecular Genetics)

1. Write a note on epigenetic regulation of gene expression. 14

Or

2. Write short notes on the following: 7x2=14
   a) Y chromosome and sex determination
   b) RNA polymerase

3. Define operon and discuss the regulation of Lac-operaon. 14

Or

4. Write briefly with suitable diagram how lysogenic and lytic mode of life cycles are genetically regulated during phase infection. 14

(Turn Over)

2. Write short notes on the following: 7x2=14
   a) Lysosome and its functions
   b) Mitochondrial respiratory complex

3. What is resting membrane potential? How does action potential propagates along the nerve fiber? 4+10=14

Or

4. Write short notes on the following: 7x2=14
   a) Active transport
   b) Fluidity of plasma membrane

5 Describe the G-protein mediated signal transduction pathway with a suitable diagram. 14

Or

6. Write short notes on the following: 7x2=14
   a) Receptor tyrosine kinases
   b) Vesicular trafficking

7. Write a detail account on the intrinsic pathway of apoptosis 14

Or

8. Write short notes on the following: 7x2=14
   a) Tumor suppressor gene
   b) Maturation promoting factor

9. What are free radicals? Describe the role of antioxidant defense system in mitigating oxidative stress. 4+10=14

Or

10. Write short notes on the following: 7x2=14
    a) Pathophysiology of Parkinson's disease
    b) Autophasy

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