3. Explain about genetic regulation of cell cycle in yeast.

Or

Write notes on cell cycle regulation in *S. cervisae*.

4. Explain about role of microbes as a vector.

Or

Discuss about *c*DNA technology.

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G-3/308/21 **Roll No.……...**

M.Sc. III Semester Examination, April-2021

BIOTECHNOLOGY

Paper IV

(Microbial Genetics)

Time : 3 Hours] [Maximum Marks : 80

Note : *All questions are compulsory. Question Paper comprises of 3 sections.* ***Section A*** *is objective type/Multiple Choice questions with no internal choice.* ***Section B*** *is short answer type with internal choice.* ***Section C*** *is long answer type with internal choice.*

SECTION 'A'

(Objective Type Questions)

Choose the correct answer : **1 × 8 = 8**

1. What are the plasmic status of bacterial cell resulting from conjugation between a F^+ and a F^- bacterium ?

(a) Two F^+ bacteria (b) Two F^- bacteria

(c) The F^+ bacterium become F^- and F^- bacterium F^+

(d) The F^+ bacterium remain as F^+ and the F^- bacterium remain as F^-

2. The recombination study of phages is done using :

(a) OD measurement (b) Plaque assay

(c) Plating assay (d) Boyden chamber array

3. The action of ultraviolet radiation on DNA to induce mutation is the :

(a) Formation of thymine dimers

(b) methylation of base pair

(c) deletion of base pair

(d) Addition of base pair

4. 'Whi' is the mutant of ……

(a) *S. cerevisiae* (b) *S. pombe*

(c) *S. pastorianus* (d) *S. bouloudil*

5. Which of the following is not a requirement of propagator ?

(a) Phenotype of yeast (b) Condition of yeast

(c) Viability of yeast (d) Cycle time of propagation

6. The reproduction in yeast is by :

(a) Binary Fission (b) Regeneration

(c) Budding (d) Fragmentation

7. What does FISH detect ?

(a) Protein structure abnormalities

(b) Specific chromosome copy number abberrations

(c) Presence of specific antigen

(d) Presence of complement

8. What is the starting material for making a *c*DNA library ?

(a) Genomic DNA (b) *m*RNA

(c) Plasmid vectors (d) Viral DNA

SECTION 'B' **6 × 4 = 24**

(Short Answer Type Questions)

Note : *Answer the following questions in 250 words.*

1. Explain about type of plasmid and replication of plasmid.

Or

Explain gene mapping in *E. coli.*

2. Explain retrovirus.

Or

Discuss lytic cycle of virus.

3. Write note on genetics of microbes.

Or

Explain check-point in yeast.

4. Explain FISH.

Or

Write about molecular technique in genetic engineering.

SECTION 'C' **12 × 4 = 48**

(Long Answer Type Questions)

Note : *Answer the following questions in 500 words.*

1. Explain in detail about transposones.

Or

Write notes on :

(a) Transduction,

(b) Conjugation.

2. Explain in detail about virus genetic system.

Or

Write note on :

(a) Mutagens,

(b) Yeast genetic system.