[4]

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

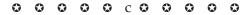
Or

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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M.Sc. III Semester Examination, April-2021

BIOTECHNOLOGY

Paper IV

(Microbial Genetics)

Time: 3 Hours 1

[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 :

 $1 \times 8 = 8$

- 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) mRNA
- (c) Plasmid vectors
- (d) Viral DNA

SECTION 'B'

 $6 \times 4 = 24$

(Short Answer Type Questions)

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

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

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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'

 $12 \times 4 = 48$

(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.