

**B.Sc. BIOTECHNOLOGY**  
**Second Semester**  
**MICROBIOLOGY-II**  
**(BBT - 07)**

**Duration: 3Hrs.**

**Full Marks: 70**

PART A (Objective) =20  
PART-B (Descriptive)=50

PART-B (Descriptive)

**Duration: 2 hrs. 40 mins.**

**Marks: 50**

**1. Write the following in short (any five):**

**2×5=10**

- a) Developmental system in chlamydiae with diagram.
- b) Prions.
- c) Define tautomerism with reference to enol & imino tautomerism.
- d) Probiotics & its importance.
- e) Microflora of GI tract.
- f) Draw a flowchart diagram on the process of cloning.
- g) Write down five general properties of drug with reference to any one antifungal drug.

**2. Answer the following questions (any five):**

**3×5=15**

- a) Write down the causative agent, introduction, symptoms & treatment of Mycobacterium tuberculosis.
- b) Explain with flowchart diagram the production of tempeh.
- c) Explain with diagram the cultivation of viruses in chick embryo.
- d) Draw & explain the differences between Ed pathway & EMP pathway.

- e) Explain any one autoimmune disease.
- f) Describe the process of hypersensitivity type IV.
- g) Describe with a neat diagram on the reproduction in basidiomycota.

**3. Answer the following questions (any five):**

**5×5=25**

- a) Define mutation. Describe induced mutation with eg.
- b) Describe the mechanism of specialized transduction with a neat diagram.
- c) Define competent cell. Describe the mode of transformation with a neat diagram.
- d) Explain the process of hypersensitivity type 1.
- e) Describe the mode of action of antibacterial drug, penicillin and tetracycline.
- f) Describe the production of acetic acid with diagram.
- g) Define SCP & write briefly about algal SCP.

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**Duration: 20 minutes**

**Marks – 20**

**PART-A (Objective)**

**Time: 20 mins**

**Total Marks: 20**

**I. Fill in the blanks:**

**1×10=10**

1. Chlamydiae is a \_\_\_\_\_ bacteria.
2. The two unique developmental bodies in chlamydia are \_\_\_\_\_ & \_\_\_\_\_.
3. The name of the smallest bacteria is \_\_\_\_\_.
4. Transposon is known as \_\_\_\_\_.
5. The key intermediate in ED pathway is \_\_\_\_\_.
6. Azidothymidine is used as an \_\_\_\_\_ drug.
7. The structure of penicillin consists of \_\_\_\_\_ ring & \_\_\_\_\_ ring.
8. Erythroblastosis foetalis is an eg of hypersensitivity type \_\_\_\_\_.
9. Degranulation of mast cells results in the production of \_\_\_\_\_.
10. YM shift represents \_\_\_\_\_.

**II. Choose the correct option:**

**1×10=10**

1. Transposon was discovered by:  
a) Alexander Fleming                      b) Barbara Macklinton  
c) Louis Pasteur                              d) Fannie Hasse
2. Ergotism is a disease caused by  
a) Deuteromycota                            b) Ascomycota  
c) Zygomycota                                d) Basidiomycota
3. Production of Edema & Erythema during PPD injection in case of person suffering from TB is due to  
a) Type II hypersensitivity                      b) Type I hypersensitivity  
c) Type III hypersensitivity                      d) Type IV hypersensitivity

4. Genes expressed only under certain environmental condition is known as  
a) Point mutation                              b) Condition mutation  
c) Lethal mutation                              d) Biochemical mutation
5. Addition or deletion of one or two basepair within the coding region of the gene is known as  
a) Spontaneous mutation                      b) Frameshift mutation  
c) Point mutation                                d) Induced mutation
6. Scrapie disease is caused due to  
a) Protein folding                              b) Bacterial infection  
c) Cell wall degranulation                      d) Fungus
7. In cultivation of virus in chicken egg, the production of a local tissue lesions is known as  
a) Pock    b) Plaque  
c) Colony formation                              d) Cytopathic lesions
8. Production of lactic acid is carried out by  
a) Lactobacillus plantarum & L. brevis                      b) Lactobacillus bulgaricus & L. brevis  
c) L. Bulgaricus & L. debreuckii                      d) L. Lacti & L. plantarum
9. Spirulina is a type of  
a) Bacterial SCP                                b) Algal SCP  
c) Fungal SCP                                      d) Yeast SCP
10. Production of histamine is a hypersensitivity.  
a) Type I    b) Type II    c) Type III    d) Type IV

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