

# P. P. SAVANI UNIVERSITY

First Semester of B.Sc. Examination

February-2022

SSBT1010-Introduction to Biotechnology I

07.02.2022, Monday Time: 12:00 p.m. to 14:30 p.m. Maximum Marks: 60

## Instructions:

1. The question paper comprises of two sections.
2. Section I and II must be attempted in separate answer sheets.
3. Make suitable assumptions and draw neat figures wherever required.
4. Use of scientific calculator is allowed.

## Section-I (Total Marks - 30)

### Q.1 Short Questions

[10]

#### 1.1 Objectives

[05]

#### 1.1a Endosperm is Triploid in

- A Gymnosperms
- B Pteridophytes
- C Angiosperms
- D Bryophytes

#### 1.1b Which of them is not a gymnosperm plant?

- A Mango
- B Ginkgo
- C Pines
- D Cycas

#### 1.1c Mosses are included in which of the following?

- A Gymnosperms
- B Pteridophytes
- C Angiosperms
- D Bryophytes

#### 1.1d Largest flowering plant is

- A Ficus
- B Wolfia
- C Rafflesia
- D Cycas

#### 1.1e Solenocytes cells are for excretion in

- A Porifera
- B Flatworms
- C Arthropoda
- D Mollusc

1.1f .....is example of poikilothermus.

- A Pisces
- B Aves
- C Human
- D Monkey

1.1g Autotomy is exhibited by

- A Star Fish
- B Lizards
- C Both A & B
- D Dolphins

1.1h Main function of tube feet in Echinodermata is

- A Locomotion
- B Food Capture
- C Respiration
- D All of the above

1.1i Aquatic form of arthropods perform excretion via

- A Green glands
- B Malpighian tubules
- C Both A & B
- D None

1.1j Trochophore larva stage is present in

- A Arthropods
- B Echinoderms
- C Mollusca
- D Reptiles

1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks)

[05]

1.2a Syncytial means one cell with many nuclei (True/False)

1.2b Study of shell in mollusc is malacology (True/False)

1.2c .....is used to transport food in plants.

1.2d .....is used to transport water in plants.

1.2e Annelids are triploblastic (True/False)

[06]

Q.2 Short Notes (Attempt any two)

A What is Triple Fusion?

B Differentiate between Chordates and non-chordates?

C Explain characters of Phylum Arthropods?

Q.3 Explain in detail (Attempt any two)

[14]

A Write important characters of Gymnosperms along with life cycle flowchart.

B Write important characters of Angiosperms along with life cycle flowchart.

C Give details of Echinodermata and Aves along with important characters and suitable examples?



Section-II (Total Marks - 30)

[10]

**Q.1 Short Questions**

[05]

**1.1 Objectives**

**1.1a** Genetic material of viruses is/are

- A Double stranded DNA
- B Single stranded DNA
- C Single stranded RNA
- D All of the above

**1.1b** Viruses needs host because they lack

- A Protein synthesis machinery
- B DNA synthesis machinery
- C Energy synthesis machinery
- D All of the above

**1.1c** Tobacco mosaic virus was first studied with

- A Beijernick filter
- B Chamberland's filter
- C Ivanowsky filter
- D Pasteur filter

**1.1d** Viruses can be classified on the basis of

- A Genetic material
- B Structure
- C Host
- D All of the above

**1.1e** Bio pesticides belong to .....

- A White Biotechnology
- B Green Biotechnology
- C Blue Biotechnology
- D Red Biotechnology

**1.1f** TMV is

- A Icosahedral
- B Helical
- C Enveloped
- D Complex

**1.1g** Prions have infectious

- A DNA
- B RNA
- C Protein
- D Carbohydrate

**1.1h** Biotechnology that is concern with products from marine sources belongs to

- A White Biotechnology
- B Yellow Biotechnology
- C Blue Biotechnology
- D Red Biotechnology

**1.1i** Bacteriophage is can example of

- A Icosahedral
- B Helical
- C Enveloped
- D Complex

**1.1j** Viroids have infectious

- A DNA
- B RNA
- C Protein
- D Carbohydrate

**1.2 Answer the Following: (MCQ/Short Question/Fill in the Blanks) [05]**

**1.2a** Define virion

**1.2b** Viruses are acellular (True/False)

**1.2c** Define Biotechnology

**1.2d** Who coined the term Biotechnology?

**1.2e** Define bioinformatics

**Q.2 Short Notes (Attempt any two) [06]**

**A** Explain viral infection cycle or steps of viral infection.

**B** Enlist few applications of Biotechnology

**C** On what basis, the viruses have been classified?

**Q.3 Explain in detail (Attempt any two) [14]**

**A** Explain different sub viral agents of viruses.

**B** Write its general properties of Virus and explain its structures.

**C** Explain how biotechnology is been divided into different colors and why?