UNIVERSITY OF THE PUNJAB

Second Semester - 2018

Examination: B.S. 4 Years Programme

Roll No. .....

PAPER: Biology -I **TIME ALLOWED: 15 Mints.**

Course Code: BIO-111 / BIO-12116 Part – I (Compulsory) **MAX. MARKS: 10**

Attempt this Paper on this Question Sheet only.

Please encircle the correct option. Each MCQ carries 1 Mark. This Paper will be collected back after expiry of time limit mentioned above.

Q. No. 1: Encircle the correct answer. **(10x1=10)**

1. The Protein coat of virus is called as ----------.
   (a). nuceid (b). capsid
   (c). capsomere (d). Outer envelope
2. The main difference between gram positive and gram negative bacteria is ----------.
   (a). Cell wall (b). Cell membrane
   (c). ribosomes (d). mitochondria
3. What is the major component of Plant cell walls?
   (a). Glucose (b). Glucan
   (c). Chitin (d). Cellulose
4. The basic repeating unit of a DNA molecule is ----------.
   (a). nucleotide (b). Nucleoside
   (c). histones (d). Amino acids
5. Which organisms convert ammonium compounds to nitrates?
   (a). decomposing bacteria (b). Decomposing fungi
   (c). nitrifying bacteria (d). Nitrogen-fixing bacteria
6. In mitosis process of Karyokinesis occurs in ----------.
   (a). telophase (b). interphase I
   (c). interphase (d). prophase
7. A pattern of interlocking food chains is called ----------.
   (a). Food web (b). Grazing food chains
   (c). Trophic level (d). None of these
8. In Proteins, most common secondary structure is ----------.
   (a). β-pleated sheets (b). α- helix
   (c). β-pleated sheets parallel (d). β-pleated sheets not parallel
9. The point where crossing over occurs is called ----------.
   (a). Synapsis (b). Chiasma
   (c). Chromatids (d). None
10. Fungi usually store reserve food material in the form of ----------.
    (a). starch (b). Lipid
    (c). glycogen (d). Protein

UNIVERSITY OF THE PUNJAB

Second Semester - 2018

Examination: B.S. 4 Years Programme

Roll No. .....

PAPER: Biology -I **TIME ALLOWED: 2 Hrs. & 45 Mints.**

Course Code: BIO-111 / BIO-12116 Part – II **MAX. MARKS: 50**

Attempt this Paper on Separate Answer Sheet provided.

Q. No. 2: Give brief answers of following questions. (10 × 2)

1. What is difference between rough and smooth endoplasmic reticulum?
2. What are Bacteriophages?
3. Give a brief comparison of Meiosis and Mitosis in living organisms.
4. What is the quaternary structure of a protein? Give any example.
5. What are Plasmids?
6. What are mycorrhizas? How do both fungi and plants benefit from this ecological interaction?
7. What are Prions and Viruses?
8. What are chromosomes? What is their basic role in inheritance?
9. What are basic shapes of bacteria? Draw them accordingly.
10. What is meant by Double fertilization in Angiosperms?

SECTION III

Q. No. 3: How Proteins are formed? Explain the Process. (10)

Q. No. 4: Describe Mendel's law of Segregation. How it is different from Law of Independent Assortment? (5)

Q. No. 5: Describe Watson and Crick's Model of DNA. (5)

Q. No. 6: Explain Fluid Mosaic Model of Plasma Membrane. (10)

UNIVERSITY OF THE PUNJAB

Third Semester 2018
Examination: B.S. 4 Years Programme

Roll No. .....

PAPER: Biology
Course Code: BIO-112

TIME ALLOWED: 2 hrs. & 30 mins.
MAX. MARKS: 50

Attempt this Paper on Separate Answer Sheet provided.

SUBJECTIVE

SECTION II

Q. No. 2: Give brief answers of following questions. (10 × 2)

1. Differentiate Prophase of mitosis from prophase of meiosis.
2. What is speciation and how it is formed?
3. Draw and label different stages of Mitosis.
4. How Law of Independent assortment is different from Law of segregation?
5. What is neuron? Draw its structure.
6. Differentiate between the terms 'Population', 'Community' and 'Ecosystem'.
7. What is Protonephridium?
8. What are different modes of nutrition in plants?
9. Draw and label different parts of a flower.
10. What are amphibious plants? Write down their main characteristics.

SECTION III

Q. No. 3: Explain in detail hormones of Pituitary gland. (10)

Q. No. 4: Why meiosis is called reductional division and what is its significance? (5)

Q. No. 5: Give structure and function of Proteins. (10)

Q. No. 6: Define and draw Cell cycle. (05)

UNIVERSITY OF THE PUNJAB

Roll No. .....

Third Semester 2018
Examination: B.S. 4 Years Programme

PAPER: Biology **TIME ALLOWED: 30 mins.**
Course Code: BIO-112 **MAX. MARKS: 10**

Attempt this Paper on this Question Sheet only.

SECTION I

(OBJECTIVE)

Q. No. 1: Encircle the correct answer. (10)

1. A common neurotransmitter is ----------.
   (a). acetyl choline (b). glucose
   (c). oxygen (d). Thyroid Stimulating Hormone (TSH)
2. Fungal cell walls contain the polymer ----------.
   (a). Cellulose (b). Lignin
   (c). Chitin (d). Suberin
3. What is the major component of Plant cell walls?
   (a). Glucose (b). Glucan
   (c). Chitin (d). Cellulose
4. The duration of mitosis in cell cycle is ----------.
   (a). 40min (b). 1 hour
   (c). 30min (d). None of these
5. Which organisms convert ammonium compounds to nitrates?
   (a). decomposing bacteria (b). decomposing fungi
   (c). nitrifying bacteria (d). nitrogen-fixing bacteria
6. The non-vascular plants are ----------.
   (a). Pteridophytes (b). Bryophytes
   (c). Gymnosperms (d). None of these
7. A pattern of interlocking food chains is called ----------.
   (a). Food web (b). Grazing food chains
   (c). Trophic level (d). None of these
8. ---------- are comprised of ---------- which are groups of interbreeding individuals of the same species.
   (a). Communities, Populations (b). Families, Populations
   (c). Communities, Families (d). None of these
9. The point where crossing over occurs is called ----------.
   (a). Synapsis (b). Chiasma
   ©. Chromatids (d). None
10. Which sequence describes the flow of energy in an ecosystem?
    (a). carnivore → herbivore → plant → Sun
    (b). plant → herbivore → carnivore → Sun
    ©. Sun → carnivore → herbivore → plant
    (d). Sun → plant → herbivore → carnivore

UNIVERSITY OF THE PUNJAB

Third Semester 2018
Examination: B.S. 4 Years Programme

Roll No. .....

PAPER: Biology-II **TIME ALLOWED: 2 hrs. & 30 mins.**
Course Code: BIO-211/BIO-21116 **MAX. MARKS: 50**

Attempt this Paper on Separate Answer Sheet provided.

SUBJECTIVE

SECTION II

Q. No. 2: Give brief answers of following questions. **(10 × 2)**

1. What is meant by trophic levels?
2. Differentiate between growth and development.
3. What is a neuron? Draw its structure.
4. What is Protonephridium?
5. Differentiate "Diffusion" and "Osmosis".
6. Differentiate between the terms 'Population', 'Community' and 'Ecosystem'.
7. What are Prions and Viruses?
8. Give different types of chromosomes on the basis of Centromere.
9. What is an ecosystem? Give its components.
10. Differentiate between food chain and food web?

SECTION III

Q. No. 3: Draw and Describe Water Cycle. **(10)**

Q. No. 4: Explain in detail hormones of Pituitary gland. **(10)**

Q. No. 5: Give structure and function of DNA. **(5)**

Q. No. 6: Explain Fluid Mosaic Model of Plasma Membrane. **(05)**

UNIVERSITY OF THE PUNJAB

Roll No. .....

Third Semester 2018
Examination: B.S. 4 Years Programme

PAPER: Biology-II **TIME ALLOWED: 30 mins.**
Course Code: BIO-211/21116 **MAX. MARKS: 10**

Attempt this Paper on this Question Sheet only.

SECTION I

OBJECTIVE

Q. No. 1: Encircle the correct answer. (10)

1. Mature Sclerenchyma cells are usually dead cells that have heavily thickened secondary walls containing ----------.
   (a). lignin (b). cutin
   (c). suberin (d). Cellulose
2. DNA strands are composed of simple monomer units called ----------.
   (a). Nucleotides (b). Amino acids
   (c). Lipids (d). Chromosomes
3. Cellulose is an example of ----------.
   (a). Monosaccharide (b). Oligosaccharide
   (c). Polysaccharide (d). Disaccharide
4. ---------- is the major component of Plant cell walls.
   (a). Glucose (b). Glucan
   (c). Chitin (d). Cellulose
5. Hormones secreted by posterior pituitary are ----------.
   (a). TSH (b). MSH & GH
   (c). Oxytocin & ADH (d). FSH
6. A common neurotransmitter is ----------.
   (a). acetyl choline (b). glucose
   (c). oxygen (d). Thyroid Stimulating Hormone (TSH)
7. A pattern of interlocking food chains is called ----------.
   (a). Food web (b). Grazing food chains

P.T.O.

(c). Trophic level (d). None of these

8. What are three main parts of the gynoecium in a flower?

(a). Filament, stigma, ovary (b). Stigma, style, ovary

(c). Anther, connective, filament (d). None of these

9. Energy and carbon enter ecosystems through ----------, are incorporated into living tissue, and eventually released through ----------.

(a). respiration, photosynthesis

(b). photosynthesis, respiration

(c). food chain, food web

(d). none of these

10. In the human stomach, ---------- are digested by the enzyme pepsin and most ---------- are killed by the low pH from HCl.

(a). Proteins, bacteria (b). Starch, amoebas

(c). Proteins, fungi (d). Starch, fungi