



# UNIVERSITY OF THE PUNJAB

Roll No. ....

Second Semester 2015  
Examination: B.S. 4 Years Programme

PAPER: Biology -I  
Course Code: BIO-111 / ...

TIME ALLOWED: 30 mins.  
MAX. MARKS: 10

*Attempt this Paper on this Question Sheet only.*

- Q. No. 1: Encircle the correct answer. (10)
- What is the major component of Plant cell walls?  
A). Cellulose  
B). Chitin  
C). Glucan  
D). Both A & B
  - Glucose is an example of  
A). Monosaccharide  
B). Oligosaccharides  
C). Polysaccharides  
D). Disaccharides
  - TMV is a  
A). DNA virus  
B). RNA virus  
C). Both a & b  
D). None of these
  - The point where crossing over occurs is called .....  
A). Synapsis  
B). Chiasma  
C). Chromatids  
D). None of these
  - Hydra* belongs to the Phylum  
A). Coelentrata  
B). Planaria  
C). Protozoa  
D). Porifera
  - A Pattern of interlocking food chains is called  
A). Grazing food chain  
B). Food web  
C). Trophic level  
D). None of these
  - Which is used as vector in Genetic Engineering?  
A). Plants  
B). Animals  
C). Plasmids  
D). Nematodes
  - The science of relationship between organisms and their environment is called  
A). Ecology  
B). Environmental biology  
C). Physiology  
D). Bionomics
  - Fungal cell walls contain the polymer  
A). Chitin  
B). Cellulose  
C). Suberin  
D). Lignin
  - Chromosome is made up of  
A). DNA  
B). Proteins  
C). DNA and Proteins  
D). DNA and Lipids



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TIME ALLOWED: 2 hrs. & 30 mins.

MAX. MARKS: 50

*Attempt this Paper on Separate Answer Sheet provided.*

## SECTION II

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

1. Differentiate Prophase of mitosis from Prophase of meiosis.
2. Write structure of an amino acid.
3. Give different types of chromosomes on the basis of centromere.
4. What are Prions?
5. How law of independent assortment is different from law of segregation?
6. What are amphibious plants?
7. Differentiate Primary and Secondary wall on the basis of chemical composition.
8. What is difference between Algae and Fungi?
9. Differentiate between the terms 'Population', 'Community' and 'Ecosystem'.
10. Give the names of six major ecosystems of world.

## SECTION III

Q. No. 3: Why meiosis is called reductional division and what is its significance? (5)

Q. No. 4: Define and draw cell cycle. (5)

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

Q. No. 6: Explain structure and Function of Endoplasmic reticulum. (10)



# UNIVERSITY OF THE PUNJAB

Roll No. ....

Second Semester 2015  
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PAPER: Biology (General Studies)  
Course Code: BIO-112 / .....

TIME ALLOWED: 30 mins.  
MAX. MARKS: 10

*Attempt this Paper on this Question Sheet only.*

Part 1 (OBJECTIVE TYPE) (1 mark each)

(10)

Encircle the correct options.

1. Enzymes that requires a co-factor which is not covalently bonded with the enzyme is called as \_\_\_\_\_
  - a). Holoenzyme
  - b). Apoenzyme
  - c). Coenzyme
  - d). None of the above
2. Mitosis is a division which is responsible for
  - a) Regeneration
  - b) Asexual reproduction
  - c) Growth
  - d) All of the above
3. External fertilization occurs in which type of environment?
  - a). Aquatic
  - b). Land
  - c) Desert
  - d). Grassland
4. Which is not the part of Abiotic component of an ecosystem?
  - a). Soil
  - b). Light
  - c). Plants
  - d). Air
5. Pineal gland releases hormone called \_\_\_\_\_
  - a). Thymosin
  - b). Oxytocin
  - c). Melatonin
  - d). Cortisol
6. In DNA, larger bases, Adenine and Guanine are called \_\_\_\_\_
  - a). Purines
  - b). Pyrimidine
  - c). Chromosomes
  - d). None
7. The plants having vascular bundle (xylem and phloem) are called \_\_\_\_\_
  - a). Bryophytes
  - b). Tracheophytes

(P.T.O.)

- c). Bryopsida
  - d). Psilopsida
8. The Mammals who have an abdominal pouch to carry their young are known as
- a). Primates
  - b). Mammalia
  - c). Marsupials
  - d). Rodents
9. A sensory neuron of the peripheral nervous system take nerve impulses from sensory receptors to the \_\_\_\_\_
- a). Motor neurons
  - b). Interneuron
  - c). CNS
  - d). Autonomic NS
10. Green Biotechnology is applied to the \_\_\_\_\_
- a). Agricultural processes
  - b). Marine life
  - c). Medical processes
  - d). Industrial processes



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

*Attempt this Paper on Separate Answer Sheet provided.*

**Part 2 (Answer shortly to the given Questions) (2 marks each)**

**(20)**

1. What is induced fit model?
2. What is the importance of PCR?
3. What is anticodon?
4. What is the importance of crossing over in Meiosis?
5. Explain the difference between prokaryotes and eukaryotes.
6. Describe the function of Follicle stimulating hormone.
7. What is reflex arc?
8. Define natural selection.
9. Differentiate between reversible and irreversible inhibitors.
10. What is the basic function of spinal cord?

**Part 3 (Answer briefly to the given Questions) (15 marks each)**

**(30)**

1. Elaborate the process of Meiosis in detail with the help of diagrams.

**OR**

Describe the method of DNA replication.

2. State and explain in detail the Mendel's Law of Independent Assortment.

**OR**

Define nerve impulse. Explain the mechanism involved.



# UNIVERSITY OF THE PUNJAB

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Third Semester 2015  
Examination: B.S. 4 Years Programme

PAPER: Biology-II

Course Code: BIO-211/.....

TIME ALLOWED: 30 mins.

MAX. MARKS: 10

*Attempt this Paper on this Question Sheet only.*

## OBJECTIVE

Q No.01. Multiple Choice Questions. Encircle the correct option. 10 Marks.

1. A structure that seems to serve no purpose in an organism is called;

- |                |               |
|----------------|---------------|
| a) Homologous  | b) vestigial  |
| c) Dichotomous | d) Fossilized |

2. Which blood transfusion would agglutinate blood?

- |                          |                             |
|--------------------------|-----------------------------|
| a) A donor --O recipient | b) A donor--A recipient     |
| c) A donor--AB recipient | d) O recipient--A recipient |

3. Malpighian tubules are excretory organs found in :

- |                |              |
|----------------|--------------|
| a) Vertebrates | b) insects   |
| d) Flat worms  | d) annelids. |

4. The recent increase in atmospheric CO<sub>2</sub> concentration is mainly a result of an increase in:

- |                           |                               |
|---------------------------|-------------------------------|
| a) Primary productivity   | b) Biosphere biomass          |
| c) Burning of fossil fuel | d) Exploding human population |

5. Bacteria and fungi act as ----- within an ecosystem.

- |                       |                     |
|-----------------------|---------------------|
| a) Primary producer   | b) Primary consumer |
| c) Secondary consumer | d) Decomposer       |

**(P.T.O.)**

6. A group of populations that interact in an area is

- a)Ecosystem      b)Population      c)Biome      d)Community

7. The\_\_\_\_\_ is part of earth in which life exist.It includes land, water and air

- a)biosphere      b)habitat      c)niche      d)community

8. Photosynthetic cells in interior of leaf are made of

- a)parenchyma      b)collenchyma      c)sclerenchyma      d)endodermis

9. How many nutrients aid in production of plant?

- a) 17      b) 14      c) 21      d)28

10. Glands are composed of which of these tissues types.

- a)epithelium      b)connective      c)muscle      d)nerves



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Course Code: BIO-211/2015

MAX. MARKS: 50

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## SUBJECTIVE

Q No. 2. Question with short answers.

20 Marks.

1. Define Ecosystem. Enlist types of ecosystems in detail.
2. Define Nervous system. Explain its types in form of flow chart.
3. Differentiate between Systemic Circulation and Pulmonary Circulation.
4. What is Monogastric Digestive System?
5. Make a list of Causes of Air Pollution.
6. What is difference between Roughages and concentrates?
7. Name some neurotransmitters?
8. AIDS stands for what?
9. What is passive immunity?
10. Define nerve impluse

Q No. 3. Question with Brief answers.

30 Marks.

1. Write the anthropogenic affects on biosphere
2. Explain the desert biome
3. Describe the functioning of Human Heart with Diagram
4. Explain bottle neck effect?
5. Explain myths and realities of Evolutionism and Creationism
6. Diagrammatically explain key processes in carbon cycle?