

Faculty of Science
B.Sc. (Zoology) II-Year, CBCS –IV Semester
Regular Examinations June/July 2022

PAPER: Cell Biology, Genetics and Developmental Biology

Time: 3 Hours

Max Marks: 80

Section-A

- I. Answer any *eight* of the following questions (8x4=32 Marks)
1. Structure of Mitochondria
 2. Types of Chromosomes based on the position of Centromere
 3. Endoplasmic Reticulum
 4. Write about the different 'Nitrogenous bases of DNA'
 5. RNA and its types
 6. What is 'Electrophoresis? Mention its applications
 7. List out the Mendel's Laws of Inheritance. Write about the Mendel's First Law
 8. Explain how the sex is determined in humans
 9. Define 'Aneuploidy'. Write about it with any one example
 10. Mention different types of eggs based on the amount of yolk
 11. Write about the different types of extra embryonic membranes of Chick embryo
 12. Regeneration in Turbellaria

Section-B

- II. Answer the following questions (4x12=48 Marks)
13. (a) Describe the ultrastructure of an animal cell with a neat labeled diagram
(OR)
(b) Define Mitosis. Explain the process of Mitosis with reference to an animal cell
 14. (a) What is Central dogma? Write the process of mRNA formation by means of 'Transcription'
(OR)
(b) What is Polymerase Chain Reaction (PCR)? Write about the steps involved in it
 15. (a) What is 'Sex linked Inheritance'? Explain it with an example
(OR)
(b) What are the inborn errors of metabolism? Describe the causes, symptoms and effects of any one
 16. (a) Define Spermatogenesis. Describe the process of Spermatogenesis
(OR)
(b) Explain the process of development of frog up to the formation of primary germ layers

Faculty of Science

B.Sc (Zoology) II-Year, CBCS –IV Semester Backlog Examinations -Jan, 2023**PAPER: Cell Biology, Genetics and Developmental Biology**

Time: 3 Hours

Max Marks: 80

Section-A

- I. Answer any *eight* of the following questions (8x4=32 Marks)
1. Structure of Ribosomes
 2. Structure and functions of Golgi body
 3. Define Cell cycle. What are the different stages involved in it?
 4. Define 'RNA'. Write about the different types of RNA
 5. Lac operon
 6. Enzymes involved in Protein synthesis
 7. Non-mendelian Inheritance
 8. Linkage
 9. Spontaneous mutations
 10. What is Cleavage? What is its significance in the development of embryo?
 11. List out the different fetal membranes of chick embryo and add a note on their functions
 12. Regeneration in Lizards

Section-B

- II. Answer the following questions (4x12=48 Marks)
13. (a) Describe in detail the structure and functions of Plasma membrane
(OR)
(b) What are the special chromosomes? Write about the Polytene chromosomes
14. (a) Discuss Watson & Crick model of DNA
(OR)
(b) What is Genetic Code? Explain the properties of Genetic Code?
15. (a) Define 'Law of Independent Assortment'. Explain this 3rd law of Mendelian Inheritance with an example.
(OR)
(b) What are the Chromosomal mutations? Describe different types of Chromosomal mutations.
16. (a) What is 'Oogenesis'? Describe the process of Oogenesis.
(OR)
(b) What is Placenta? List out the types of Placenta and add a note on its functions

Faculty of Science

B.Sc (Zoology) III-Year, CBCS –IV Semester Regular Examinations –June, 2023**PAPER: Cell Biology Genetics and Development Biology**

Time: 3 Hours

Max Marks: 80

Section-AI. Answer any *eight* of the following questions (8x4=32 Marks)

1. Uniport
2. Mitochondrion
3. Metaphase
4. Electrophoresis
5. Gene pool
6. m-RNA
7. Aneuploidy
8. Klinefelter syndrome
9. Co-dominance
10. Megalecithal Eggs
11. Yolk Sac
12. Regeneration

Section-B

II. Answer the following questions (4x12=48 Marks)

- 13.(a) Define a Cell? Describe the ultra-structure of an animal cell?
(OR)
(b) Describe the Structure and functions of Plasma membrane in detail?
- 14.(a) Define gene expression? Explain the **Operon concept** elaborately?
(OR)
(b) Explain the Principle and working mechanism PCR?
- 15.(a) What is crossing over? Explain in detail?
(OR)
(b) Define sex determination? Explain the sex determination in *Drosophila*?
- 16.(a) What are foetal membranes? Describe the formation foetal membranes in chick embryo and their functions in detail?
(OR)
(b) Explain the different types of regeneration and mechanism in *Turbellaria*.

Faculty of Science

B.Sc (Zoology) III-Year, CBCS –IV Semester Regular Examinations –June, 2023

PAPER: Cell Biology Genetics and Development Biology

Time: 3 Hours

Max Marks: 80

విభాగం - ఎ

I. ఈ క్రింది ఏవైనా ఎనమిది ప్రశ్నలకు సమాధానములు వ్రాయండి. (8x4=32 Marks)

1. యూనిఫోర్మ్
2. మైటోకాండ్రియా
3. మధ్యస్థ దశ
4. ఎలక్ట్రో ఫోరోసిస్
5. జన్యు సమీకరణము
6. m-RNA
7. ఎన్యూప్లాయిడ్
8. క్లస్ ఫిల్టర్ సిండ్రోమ్
9. మెండల్ యేతర అనువంశికత
10. మెగాలిసిథల్ అండాలు
11. సోనసంచి
12. పునరుత్పత్తి

విభాగం - బి

II. ఈ క్రింది ప్రశ్నలకు సమాధానములు వ్రాయండి. (4x12=48 Marks)

13. (a) కణంను నిర్వచించి, జంతుకణం అతిసూక్ష్మ నిర్మాణంను వర్ణించండి.
(లేదా)
(b) ప్లాస్మాత్వచం నిర్మాణంను మరియు దాని విధులను వర్ణించండి.
14. (a) జన్యు వ్యక్తీకరణ అనగానేమి? "ఓపరాన్ భావన"ను వివరించండి.
(లేదా)
(b) PCR లో ఇమిడి ఉన్న సూత్రం మరియు పనిచేయు విధానం గూర్చి వివరించండి.
15. (a) జన్యువుల దాటుడు (క్రాసింగ్ ఓవర్) అనగానేమి వివరించండి.
(లేదా)
(b) లింగ నిర్ధారణ అనగానేమి? డ్రానోఫిలాలో జరుగు లింగనిర్ధారణను వివరించండి.
16. (a) పిండత్వచాలు అనగానేమి? కోళ్ళలో ఏర్పడు పిండత్వచాల గూర్చి తెలుపుతూ వాటి విధులను పేర్కొనుము.
(లేదా)
(b) పునరుత్పత్తి అనగానేమి? టర్బుల్లేరియాలో జరుగు పునరుత్పత్తిని వివరించండి.
