

ZOOLOGY

Total No. of Questions: 16]

Total No. of Printed Pages: 1

Paper 1

Time: 1½ Hours

Maximum Marks: 35

SECTION-A (1 mark each)

General Instructions:

This question paper contains four Sections:

- (i) Section-A contains five Very Very Short Answer Type Questions of 1 mark each.
 $1 \times 5 = 5$ marks
- (ii) Section-B contains five Very Short Answer Type Questions of 2 marks each to be answered in 20-30 words. $2 \times 5 = 10$ marks
- (iii) Section-C contains five Short Answer Type Questions of 3 marks each to be answered in 100-150 words. $3 \times 5 = 15$ marks
- (iv) Section-D contains one Long Answer Type Question to be answered in 150-200 words. $5 \times 1 = 5$ marks

SECTION-A (1 mark each)

1. Which one is found in males only?
(A) X-Chromosome (B) Y-Chromosome
(C) 2X-Chromosome (D) None of these
2. Name the evolutionary of man with brain capacity 900 C.C.
3. The Trisomic condition is represented as:
(A) $2X+1$ (B) $2X-1$
(C) $2X+2$ (D) $2X-2$
4. The causative agent of Filariasis is _____ (Fill in the blank).
5. Providing a functional gene to overcome a defective gene. (Substitute one word).

SECTION-B (2 marks each)

6. Write down the functions of oxytocin hormone in human females.
7. Write short note on adaptive radiation.
8. How is sex determined in Human beings?
9. What do you mean by Biosafety issues?
10. Give the applications of genetically engineered insulin.

SECTION-C (3 marks each)

11. With the help of diagram explain the microscopic anatomy of Testis.
12. Write short note on Gene flow and Genetic drift.
13. Write a short note on Turner's Syndrome.
14. Write a short note on Drug abuse.
15. How sexual diseases can be prevented?

SECTION-D (5 marks)

16. Explain the need of Reproductive Health. Also add a note on medical termination of pregnancy.

Or

Describe human male reproductive system with the help of diagram.

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Paper 2

Time: 1½ Hours

Maximum Marks: 35

SECTION-A (1 mark each)

1. Name the finger-like projections that appear on the trophoblast after Implantation.
2. Expand the term 'SNPs'.
3. 'Mary Mallon' is nicknamed as 'Typhoid Mary' for which of the following:
(A) Influenza (B) Widal Test
(C) Malaria (D) AIDS
4. What is the common name of Heroin?
5. The capacity to generate a whole plant from any cell/explant is called:
(A) Tissue culture (B) Totipotency
(C) Hybrid (D) None of these

SECTION-B (2 marks each)

6. Define Spermiogenesis and Spermiation.
7. What do you mean by Lactational Amenorrhea?
8. Write down two preventive measures of 'Hepatitis'.
9. Name two principles of Biotechnology.
10. Write down two applications of Gene Therapy.

SECTION-C (3 marks each)

11. Draw a neat and labelled diagram of Anatomy of Testis.
12. Write down three preventive measures of STDs.
13. List down three points of difference between Linkage and Crossing over.
14. Write down the goals of 'Human Genome Project'.
15. What are Vaccines? Give their significance.

SECTION-D (5 marks)

16. What do you mean by Sex-linked Inheritance? Elaborate your answer reference to Haemophilia and Color blindness.

Or

Define Evolution. Write down in brief Modern Synthetic theory of Evolution

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Paper 3

Time: 1½ Hours

Maximum Marks: 35

Section-A 1 each

1. 'Prostate' is a:
(A) Terminal infundibulum (B) Sex duct
(C) Accessory sex gland (D) Tubule of nephron
2. Failure of a 'Chromatid' to Segregate during cell division can lead to:
(A) Down's syndrome (B) Turner's syndrome
(C) Klinefelter syndrome (D) All of these
3. SNP's pronounced as 'Snips' in human DNA occur in about locations.
(A) 4.1 million (B) 1.4 million
(C) 2.4 billion (D) 4.7 million
4. The Toxin 'Haemozoin' usually causes:
(A) Common cold (B) Skin lesions
(C) Recurring fever (D) Dysentery
5. Which of the following is a Restriction Enzyme?
(A) Hind II (B) Plasmid
(C) Ligases (D) *E. Coli*

Section-B 2 each

6. Draw a neat and well labelled diagram of the structure of human ovary.
7. Write a short note on Haemophilia.
8. What do you mean by Gene Flow?
9. What are Transgenic Animals?
10. Enlist some of the applications of Stem Cell Technology.

Section-C 3 each

11. Explain the various stages of development from a Zygote up to a blastocyst. Supplement your answer with the help of diagrammatic sketches.
12. Give an account of the course of human evolution from a toolmaker man to the modern technological one.
13. Explain in brief the Anatomical evidence of Biological evolution.
14. What are the remarkable characteristics of Adolescence in Humans? What is the need of counselling in this stage?
15. What is Drug Abuse? List the various ill-effects of opioids?

Section-D 5 each

16. Give a comparative graphical sketch of spermatogenesis and oogenesis in humans?

Or

Define Infertility. Explain the barrier methods of birth control in Human beings.

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Paper 4

Time: 1½ Hours

Maximum Marks: 35

SECTION-A

(VERY VERY SHORT ANSWER TYPE QUESTIONS) 1 each

1. Site of fertilization in mammals is:
(A) Ovary (B) Uterus
(C) Vagina (D) Fallopian tube
2. Trisomic condition is represented as:
(A) $2n + 1$ (B) $2n - 2$
(C) $2n + 2$ (D) None of these
3. Inheritance is controlled by Multiple alleles in:
(A) Colour-blindness (B) Sickle cell anaemia
(C) Phenyl ketonuria (D) Blood group
4. AZT is used in treatment of:
(A) Malaria (B) AIDS
(C) T.B. (D) Kala-Azar
5. The process of vaccination was discovered by:
(A) Edward Jenner (B) Robert Koch
(C) Louis Pasteur (D) Von-Behring

SECTION-B

(VERY SHORT ANSWER TYPE QUESTIONS) 2 each

6. What do you mean by 'Amniocentesis'?
7. What is Placenta? Write down its functions.
8. What are Darwin's finches?
9. Write down preventive measures of 'Hepatitis'.
10. What do you mean by 'Biosafety Issues'?

SECTION-C

(SHORT ANSWER TYPE QUESTIONS) 3 each

11. Draw a well labelled diagram of Microscopic anatomy of testis.
12. Write a short note on colour blindness in human beings.
13. Write down the applications of Gene therapy.
14. Explain the term 'MTP' in brief.
15. Write a short note on drug abuse.

SECTION-D

(LONG ANSWER TYPE QUESTIONS) 5

16. What do you mean by 'DNA Fingerprinting'? Explain in brief 'Human Genome Project' and its significance. Or
Explain Hardy-Weinberg's principle. Add a note on adaptive radiation.