



Avinashilingam Institute for Home Science and Higher Education for Women

Deemed to be University Estd. u/s 3 of UGC Act 1956, Category 'A' by MHRD (now MoE)

Re-accredited with 'A++' Grade by NAAC. CGPA 3.65/4, Category I by UGC

Coimbatore - 641 043, Tamil Nadu, India

Bachelor's Degree Arrear Examination – May 2025 I Semester

Batch : 2024
Major : Physician Assistant

Time: 3 Hours
Max. Marks: 100

22BPAC05 Human Genetics

Course Outcomes:

CO1 : To understand basics of genetics, chromosomes and mutation

CO2 : To understand maternal, prenatal and genetic influences

CO3 : To understand congenital malformations and other genetic conditions

CO4 : To develop skills in laboratory genetics

CO5 : To understand legal and ethical issues in Human Genetics

Part A

10 x 1= 10

Choose the Correct Answer

- | | | |
|--|--|-------|
| 1. Mitosis is important for a. Reproduction c. Genetic variation | b. Growth and repair d. Immune response | CO1K1 |
| 2. Sex is determined by a. X-chromosome c. Both X and Y chromosomes | b. Y-chromosome d. Number of chromosomes | CO1K1 |
| 3. An example of a genetic disorder is a. Common cold c. Flu | b. Down syndrome d. Pneumonia | CO2K1 |
| 4. Folic acid is important for preventing a. Heart disease c. Diabetes | b. Neural tube defects d. Cancer | CO2K1 |
| 5. Genetic counseling helps a. Treat genetic conditions c. Cure genetic disorders | b. Understand in heritance risks d. Change genetic makeup | CO3K2 |
| 6. Consanguinity means a. Marriage between relatives c. Genetic testing | b. Medical treatment d. Blood transfusion | CO3K1 |
| 7. The human body normally has a. 23 pairs of chromosomes c. 12 pairs of chromosomes | b. 46 pairs of chromosomes d. 36 pairs of chromosomes | CO4K1 |
| 8. Phenylketonuria is a a. Infectious disease c. Skin condition | b. Metabolic disorder d. Heart problem | CO4K1 |
| 9. Genetherapy aims to a. Replace defective genes c. Create new organs | b. Remove all genes d. Prevent aging | CO5K2 |
| 10. Karyotyping helps in a. Blood testing c. Measuring blood pressure | b. Analyzing chromosomes d. Checking heart rate | CO5K1 |

Part B

5X6=30

Answer All questions

Each answer should not exceed 400 words or two pages

- 11.a. Difference between Mitosis and Meiosis. (or) CO1K2
11.b. Explain in detail about Mendelian theory of inheritance. CO1K1
12.a. Explain on consanguinity and consanguinityatopy. CO2K1
(or)
12.b. Explain about maternalage and prenatal nutrition. CO2K1
13.a. Write a note on congenital malformations. CO3K2
(or)
13.b. Explain about Developmental delay. CO3K2
14.a. Explain about genetic testing and its types. CO4K1
(or)
14.b. Discuss on Screening for Congenital abnormalities. CO4K1
15.a. Write a note on Eugenics movement. CO5K2
(or)
15.b. Explain about types of genetic counseling. CO5K2

Part C

5x12=60

Answer All questions

Each answer should not exceed 800 words or four pages

- 16.a. Characteristics and structure of genes and Chromosomes with diagram. CO1K1
(or)
16.b. Write a note on sex linked inheritance. CO1K2
17.a. Explain briefly on Infertility. CO2K1
(or)
17.b. Explain about maternal drug therapy. CO2K1
18.a. Explain briefly about IEM. CO3K2
(or)
18.b. Discuss aboutterra to genesis. CO3K2
19.a. Explain briefly on Karyotyping. CO4K1
(or)
19.b. Explain about pedigree construction. CO4K1
20.a. Explain briefly about gene therapy. CO5K2
(or)
20.b. Discuss about Human genome project. CO5K2
