

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

PG DEGREE EXAMINATION DECEMBER 2023
(Third Semester)

TRANS DISCIPLINARY COURSE
(Common to PG Programmes)

HEALTH CARE BIOTECHNOLOGY

Time: Three Hours

Maximum: 50 Marks

SECTION-A (5 Marks)

Answer ALL questions

ALL questions carry EQUAL marks

(5 x 1 = 5)

1. Which chemical helps to breakdown the peroxides?
(i) Magnesium (ii) Manganese
(iii) Iron (iv) Selenium
2. Find which one is a biomarker.
(i) Myoglobin (ii) Hemoglobin
(iii) TNF-Alpha (iv) Albumin
3. Indicate the inheritance pattern of Myocardial infarction.
(i) Allosomal dominant (ii) Allosomal recessive
(iii) Autosomal dominant (iv) Autosomal recessive
4. Which method uses antigen and antibody to diagnose the disease?
(i) PCR (ii) DNA Microarray
(iii) ELISA (iv) Electron microscope
5. Which cells have stem cells capability and are present in the early development of an embryo?
(i) Inner cell mass (ii) Outer cell mass
(iii) Middle cell mass (iv) Peripheral cell mass

SECTION - B (15 Marks)

Answer ALL Questions

ALL Questions Carry EQUAL Marks

(5 x 3 = 15)

6. a. Discuss the various components of food.
OR
b. Explain the importance of traditional foods.
7. a. Assume the patient has a metabolic dysfunction. List the symptoms that he/she can exhibit.
OR
b. Solve the difference between genetic diseases and genetic predisposition.
8. a. Illustrate the action of activators DNA binding activity and their trans-activating potency in regulating the insulin gene expression.
OR
b. Determine how environmental and innate biological factors interacts to cause the obesity in the humans?
9. a. Analyze how Dot Blot Elisa differs from conventional ELISA?
OR
b. Elucidate the working principle of Reverse Transcriptase PCR.

Cont...

10. a. Justify the importance of pharmacogenetics in precision medicines.
OR
b. Explain the contents of genetic counselling.

SECTION -C (30 Marks)

Answer ALL questions

ALL questions carry EQUAL Marks

(5 x 6 = 30)

11. a. Elucidate the role of mucosal tolerance in maintaining the gut microbiota.
OR
b. Categorize the importance of antioxidants in protecting the humans from various diseases that arise due to the generation of free radicals.
12. a. Enumerate the types of genetic markers. How will you establish that genes are the contributors for some chronic diseases? Explain with an example.
OR
b. Interpret the genetic markers of inflammation and its role in cardiovascular disease.
13. a. Determine the genetic influence on lipid metabolism.
OR
b. Analyze whether the Crohn's disease is recessive or dominant?
14. a. Explain the importance of DNA Microarray technology in the diagnosis of cancers.
OR
b. Classify the types of Protein Microarrays. How it differs from DNA Microarray in producing a good signal with low noise background?
15. a. Explain the importance of Autologous stem cells transplant with regard to its benefits, risks and recovery of patients.
OR
b. Evaluate the impacts of DNA microarray in the gene therapy.

Z-Z-Z

END