

**R8371**

**Sub. Code**

**508201**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Second Semester**

**Biomedical Science**

**MEDICAL GENETICS**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. The inheritance mode is determined by
  - (a) Gene
  - (b) Genome
  - (c) Genotype
  - (d) Phenotype
  
2. \_\_\_\_\_ is the phenomenon in which a single locus affects two or more distinct phenotypic traits.
  - (a) Epistasis
  - (b) Pleiotropy
  - (c) Polygenic inheritance
  - (d) Variable expressivity
  
3. “Christmas disease” is characterized by lack of \_\_\_\_\_ clotting substance (thromboplastin) in blood.
  - (a) factor VII
  - (b) factor VIII
  - (c) factor IX
  - (d) factor XI

4. Which of the following is an example of chromosomal abnormality that occurs when whole chromosomes do not separate properly during meiosis?
- (a) Down syndrome
  - (b) Turner syndrome
  - (c) Huntington Disease
  - (d) Klinefelter syndrome
5. Hereditary tyrosinemia is caused by the deficiency of \_\_\_\_\_ enzyme.
- (a) Tyrosinase
  - (b) Tyrosine hydroxylase
  - (c) Tyrosine transaminase
  - (d) P-hydroxyphenylpyruvic acid oxidase
6. Which one of the following Phase II metabolic processes exhibits polymorphism?
- (a) Glucuronidation
  - (b) Sulphation
  - (c) Metabolism by sulphotransferases
  - (d) Conjugation with an amino acid
7. The major genes related to Crohn disease includes all of the following EXCEPT:
- (a) EDN1
  - (b) NOD2
  - (c) IL23R
  - (d) ATGI6L1
8. Which of the following is a genetic disease that results in almost no adaptive immunity due to lack of B or T cells?
- (a) Agammaglobulinemia
  - (b) Myasthenia gravis
  - (c) Severe combined immunodeficiency
  - (d) Chronic granulomatous disease



15. (a) Write a short note on inherited mitochondrial DNA diseases.

Or

- (b) Explain inherited cardiomyopathies and their genetic basis.

**Part C** (5 × 8 = 40)

Answer any **five** questions.

16. Detail the principles of Mendelian inheritance and variation.
17. Elaborate the methods of chromosome detection and analysis.
18. Summarize the general chromosomal anomalies associated to cancer.
19. What are glycogen storage diseases? Discuss the types, causes and clinical symptoms.
20. Define and discuss the importance of pharmacogenetics and pharmacogenomics.
21. Explain the types, mechanism and demonstration of genetic predisposition of diabetes.
22. Describe the classes of gene mutations in human and explain each of them.
23. What are single gene disorders? Discuss any two disorders.

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**508202**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Second Semester**

**Biomedical Science**

**PHARMACOLOGY**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 1 = 10)

Answer **all** questions.

1. The science which deals with the drug and their action on human body is called
  - (a) Physiology
  - (b) Pathology
  - (c) Pharmacogenomics
  - (d) Pharmacology
  
2. Drugs are excreted from the body through
  - (a) Kidney
  - (b) Saliva, Sweat
  - (c) Intestine
  - (d) All of the above
  
3. Which of the following is not considered for classification of drugs?
  - (a) Based on size
  - (b) Based on chemical structure
  - (c) Based on drug action
  - (d) Based on target

4. Typical high potency antipsychotics
  - (a) Haldol
  - (b) Loxitane
  - (c) Thorazine
  - (d) Moban
  
5. The first step in the drug discovery process is
  - (a) Lead modification
  - (b) Lead identification
  - (c) Lead validation
  - (d) Lead optimization
  
6. The safety of the candidate drug in humans are studied in
  - (a) Phase I
  - (b) Phase II
  - (c) Phase III
  - (d) Phase IV
  
7. The WHO international drug monitoring programme was established in the year
  - (a) 1986
  - (b) 1990
  - (c) 1996
  - (d) 1968
  
8. Pharmaco vigilance is done for monitoring
  - (a) Unethical practices
  - (b) Drug price
  - (c) Drug safety
  - (d) Drug adulteration
  
9. When did the Narcotic drugs and Psychotropic Substance Act, 1985, come into force?
  - (a) 01 April 1986
  - (b) 01 March 1986
  - (c) 16 September 1985
  - (d) 23 April 1985

10. Penalties for offences like manufacture of any spurious drugs
- (a) 1–3 year imprisonment and Rs.5000 fine
  - (b) 1 year imprisonment and Rs.2000 fine
  - (c) Imprisonment upto 3 months and Rs.500 fine
  - (d) Imprisonment upto 6 months and Rs.1000 fine on subsequent conviction

**Part B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Write a note on mechanism of drug action.
- Or
- (b) Briefly explain the methods involved in prolongation of drug effect.
12. (a) Add a note on Cardiovascular drugs.
- Or
- (b) Applications of Immunostimulants drugs.
13. (a) Comment on pre clinical phase of drug discovery process.
- Or
- (b) Give an account on Neuromuscular blockers.
14. (a) Highlight the importance of Pv laws and guidelines.
- Or
- (b) How will you perform therapeutic audit.
15. (a) List out the animal care methods.
- Or
- (b) Comment on Drug and Cosmetic Act.

**Part C**

(5 × 8 = 40)

Answer any **five** questions.

16. Discuss in detail about the various routes of drug administration.
  17. Explain about various drug transducers and their mechanism of action.
  18. Narrate the pharmacology of drug acting on cholinergic and adrenergic system.
  19. Elaborate the mechanism of action of narcotic analgesics.
  20. What is Gene therapy? Comment its application in high through put screening system.
  21. Explain about the Pharmacovigilance Program of India (PvPI).
  22. What are the CPCSEA guidelines for breeding and stocking of animals.
  23. List out the classes of drugs and cosmetics prohibited from import.
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**R8373**

**Sub. Code**

**508503**

**M.Sc. DEGREE EXAMINATION, APRIL – 2023**

**Second Semester**

**Biomedical Science**

**FORENSIC SCIENCE**

**(CBCS – 2022 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Section A**

(10 × 1 = 10)

Answer **all** questions.

1. First central forensic science laboratory in India
  - (a) Delhi
  - (b) Chennai
  - (c) Mumbai
  - (d) Kolkata
  
2. The word Forensic Science is derived from
  - (a) Latin word Forensis
  - (b) Greek word Forensis
  - (c) American word Forensis
  - (d) English word Forensis
  
3. Physical evidence at the scene of the crime should be collected in the presence of
  - (a) Relatives of the victim
  - (b) One independent witness
  - (c) Two independent witness
  - (d) Magistrate

4. Who popularized scientific crime detection method
  - (a) Sir Arthur Conan Doyle
  - (b) Sir Arthur Conan Boyle
  - (c) Francis Galton
  - (d) Calvin Goddard
5. Color that can be observed in nitric acid toxicity is
  - (a) White
  - (b) Black
  - (c) Yellow
  - (d) Red
6. The duties of forensic scientist include
  - (a) compiling written report
  - (b) analysing tool and photographs
  - (c) gathering evidence
  - (d) All the above
7. BEOs technique was developed by
  - (a) Champadi Raman Mukundan
  - (b) Calver Goddard
  - (c) Mathieu Ortila
  - (d) William M. Bair
8. Which of the following is not a type of cyber crime
  - (a) Data theft
  - (b) Forgery
  - (c) Damage to data and system
  - (d) Installing antivirus for protection
9. Which of the following is a part of the psychosocial domain?
  - (a) Judgement
  - (b) Style of behaving
  - (c) Memory
  - (d) Motor Skills

10. Psychologist cooperate in
- (a) Ethics
  - (b) Investigation
  - (c) Proceedings
  - (d) All of these

**Section B**

(5 × 5 = 25)

Answer **all** questions, choosing either (a) or (b).

11. (a) Highlight the historical development in forensic science.

Or

- (b) What are the future scope of forensic science in India?

12. (a) What are the different types of crimes?

Or

- (b) Add a short note on crime scene management.

13. (a) List out the duties of forensic scientist.

Or

- (b) Comment on types of document in forensic science.

14. (a) What is polygraph test? Mention the pros and cons of it.

Or

- (b) What are the role of cyber forensic.

15. (a) What are the ethical issues encountered in psychology?

Or

- (b) Comment on modern perspective of psychology.

**Section C**

(5 × 8 = 40)

Answer any **five** questions.

16. Give detailed account on importance and work carried out in forensic science.
  17. Give an account on the basic requirement and procedure for the set up of forensic lab in country.
  18. Discuss in detail about the procedure to be followed at crime scene.
  19. Explain in detail about the role of biology in crime investigation.
  20. What is DNA finger printing? Add a note on its principle and methodology.
  21. What is video authentication and documentation? and how it will be useful for crime detection.
  22. Discuss in detail about the types of psychological profession.
  23. Explain about the scientific Research methods in psychology.
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