

R6719

Sub. Code

508201

M.Sc. DEGREE EXAMINATION, APRIL – 2022.

Second Semester

Biomedical Science

MEDICAL BIOCHEMISTRY

(CBCS – 2019 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. How many molecules of CO₂ are produced per mole of acetyl Co-A in TCA cycle
 - (a) 2
 - (b) 1
 - (c) 3
 - (d) 0
2. Which of the following intermediate of the TCA cycle cannot be utilized for gluconeogenesis?
 - (a) Succinate
 - (b) Malate
 - (c) Alpha ketoglutrute
 - (d) Acetyl Co-A
3. Beta oxidation of long chain fatty acids occur primarily in which of the following location?
 - (a) Cytosol
 - (b) Mitochondria
 - (c) Golgi complex
 - (d) Endoplasmic reticulum

4. The NADPH is synthesized by the action of the which of the following enzymes?
- (a) Glucose 6 p dehydrogenase
 - (b) Pyruvate dehydrogenase
 - (c) Acetyl Co-A carboxylase
 - (d) Glycerol kinase
5. cAMP and cGMP are derived from
- (a) ATP and GTP by the actions of guanylate cyclase and adenylate cyclase respectively
 - (b) ATP and GTP by the actions of adenylate cyclase and guanylate cyclase respectively
 - (c) GTP and ATP by the actions of adenylate cyclase and guanylate cyclase respectively
 - (d) None
6. Ras protein is a
- (a) G-protein switch
 - (b) Small monomeric GTPase switch protein
 - (c) Serine-threonine kinase
 - (d) Tyrosine kinase
7. Which of the following is not a source of hydrogen ion in the body?
- (a) Ingestion of citrus food
 - (b) High protein diet
 - (c) Ingestion of red meat
 - (d) Starvation
8. Which of the following used for the fatty acid synthesis?
- (a) Cobalamine
 - (b) NADPH
 - (c) Biotin
 - (d) Bicarbonate

9. The two principal contractile proteins found in skeletal muscle are:
- (a) Actin and troponin
 - (b) Actin and myosin
 - (c) Troponin and tropomyosin
 - (d) Myosin and tropomyosin
10. Plasma cells:
- (a) Have a thin layer of cytoplasm
 - (b) Are derived from T-cells
 - (c) Develop into B-cells
 - (d) Have a highly developed rough endoplasmic reticulum

Part B

(5 × 5 = 25)

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

11. (a) Classify the types of amino acids.
- Or
- (b) Write short notes about the oxygen transport.
12. (a) Briefly explain about the biosynthesis of carbohydrates in liver cells.
- Or
- (b) Discuss about the pathway of amino acid degradation.
13. (a) What are transcriptomics and metabolomics?
- Or
- (b) Brief explain about the membrane receptors.

14. (a) How the blood sugars are being regulated?

Or

(b) How does the liver detoxify the toxic substances?

15. (a) Briefly discuss about the bone metabolism.

Or

(b) Write short notes about the muscle energy metabolism.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Illustrate the process of TCA cycle.

17. Discuss in detail about the biosynthesis and storage of cholesterol.

18. Explain in detail about the molecular basis of DNA and RNA.

19. Discuss the process of the digestion and absorption of nutrients in human body.

20. Write an essay about the innate and adaptive immunity.

R6720

Sub. Code

508202

M.Sc. DEGREE EXAMINATION, APRIL – 2022

Second Semester

Biomedical Science

CLINICAL MICROBIOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Bacteria with less than a complete twist or comma shaped is known as?
(a) spirilla (b) helical
(c) vibrioid (d) spirochetes
2. An epitope is
(a) a B-cell
(b) ahapten
(c) an antibody
(d) the antigen determinant site
3. _____ are gram-negative, motile, spiral bacteria, from 3 to 500 m (1 m = 0.001 mm) long.
(a) *Spirochetes*
(b) *Streptococci* sp.
(c) *Proteus*
(d) *E. coli*

4. The bacteria which can be grown at MacConkey agar culture plate, gram-negative, rod-shaped, and facultative anaerobic bacteria known as _____
- (a) *Proteus vulgaris* (b) *E. coli*
(c) *Klebsiellasp.* (d) *Streptococci* sp.
5. Which of the following agent is used to prevent Malaria
- (a) Mebendazole
(b) Chloroquine
(c) Inactivated vaccine
(d) Zinc table
6. Each of the following parasite is transmitted by mosquitoes except:
- (a) *Leishmaniadonovani*
(b) *Wuchereriabancrofti*
(c) *Plasmodium vivax*
(d) *Plasmodium falciparum*
7. Perfect stage of fungus means
- (a) When the fungi is perfectly healthy
(b) When it reproduce asexually
(c) When it forms perfect sexual spores
(d) None of these
8. Fungal spores produced asexually at the tip of the hyphae are called
- (a) Spornaiosphore
(b) Anthospore
(c) Conidia
(d) Meiospore

9. What does HIV-positive mean?
- (a) Either antibodies against HIV or the virus particles themselves are present in the blood
 - (b) You have been tested for HIV
 - (c) Your white cell count is high
 - (d) You have been informed about HIV
10. 3'-azido-3'-deoxythymidine is used to treat
- (a) AIDS
 - (b) Malaria
 - (c) Filariasis
 - (d) Elephantiasis

Part B

(5 × 5 = 25)

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

11. (a) Write short notes about the bacterial growth curve.
- Or
- (b) What are the properties of antibodies?
12. (a) Briefly explain about the modern bacterial taxonomy.
- Or
- (b) How will you diagnose and treat the *Neisseria* infection?
13. (a) Briefly explain about the diagnostic methods of the *Entamoeba* Sp. infection.
- Or
- (b) What are the symptoms of *Giardia* infections in human? How will you treat?

14. (a) Illustrate the structure and characteristics of fungi.

Or

(b) Write about the pathogenesis of the *Cryptococcus*.

15. (a) Illustrate the structure and symmetry of viruses.

Or

(b) What are all the polio and rabies vaccination schedules?

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail about the morphology and classification of microorganisms.

17. How will you diagnose, treat and prevent the *Pseudomonas* Nosocomial infection.

18. Discuss in detail about the life cycle, diagnostics and treatment of the malaria.

19. Write in detail about the pathogenesis and diagnosis of the Opportunistic fungus with two suitable examples.

20. Explain in detail about the life cycle, diagnosis and treatment of the HIV infection.

R6721

Sub. Code

508203

M.Sc. DEGREE EXAMINATION, APRIL – 2022.

Second Semester

Biomedical Science

CLINICAL PATHOLOGY

(CBCS – 2019 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. The transfer of tissue between individuals of different species is called
 - (a) autograft
 - (b) xenograft
 - (c) allograft
 - (d) syngeneic graft

2. The test that is done prior to transplantation surgery to determine the compatibility of MHC proteins between donar and recipient is called
 - (a) MHC matching
 - (b) MHC typing
 - (c) Tissue typing
 - (d) Blood HLA test

3. Mosquito responsible for malaria transmission
 - (a) *Aedesaegypti*
 - (b) *Aedesalbopictus*
 - (c) *Anopheles*
 - (d) *Haemagogus*

4. Which of the following the best describes the roles of reverse transcriptase
- (a) Synthesis of RNA from genomic RNA
 - (b) Synthesis of DNA from genomic DNA
 - (c) Synthesis of DNA from genomic RNA
 - (d) Synthesis of mRNA from genomic Host DNA
5. _____ is a condition that causes thick, plaque-like white patches on the tongue, gums, and lining of the mouth.
- (a) Leukoplakia
 - (b) UTI
 - (c) Tonsillitis
 - (d) None of the above
6. Which of the following reagents is used to react with ketones in the urine?
- (a) Sodium nitroprusside
 - (b) Acetoacetic acid
 - (c) Acetone
 - (d) Beta-hydroxybutyric acid
7. Blood platelets are also called as
- (a) lymphocytes
 - (b) phagocytes
 - (c) monocytes
 - (d) thrombocytes
8. Which of the following terms is used to describe a chronic liver disease in which scar tissue surrounds the portal areas?
- (a) Alcoholic cirrhosis
 - (b) Postnecrotic cirrhosis
 - (c) Biliary cirrhosis
 - (d) D. Compensated cirrhosis

9. An autoimmune disease of the thyroid tissue is called:
(a) Graves disease (b) Thyroiditis
(c) Thyroid Cancer (d) None of the above
10. At which stage of the uterine cycle does the menstrual phase occur?
(a) Days 1 to 5 (b) Days 5 to 14
(c) Days 14 to 28 (d) Days 0 to 5

Part B

(5 × 5 = 25)

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

11. (a) Discuss the wound healing process.
- Or
- (b) How will you diagnose the lumps using the FNAC method?
12. (a) Briefly explain about the etiology of AIDS.
- Or
- (b) Write short notes about the myocardial infarction.
13. (a) Discuss about the stages of pneumonia.
- Or
- (b) Briefly explain about the carcinoma of oral cavity.
14. (a) What are all the symptoms and treatments of myelofibrosis.
- Or
- (b) Briefly explain about the hepatocellular carcinoma.

15. (a) How will you diagnose the reproductive system diseases?

Or

- (b) Write short notes about the trophoblastic diseases.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Explain in detail about the organization and development of immune responses.
17. Explain in detail about the pathogenesis, diagnosis and treatment of filariasis.
18. Discuss in detail about the causes, diagnosis, and treatment of tuberculosis.
19. What are all the symptoms, diagnosis and treatments of liver hepatitis and cirrhosis?
20. Write an essay on diagnosis of pyogenic, tuberculosis meningitis and brain abscess.
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R6722

Sub. Code

508503

M.Sc. DEGREE EXAMINATION, APRIL – 2022

Second Semester

Biomedical Science

HOSPITAL MANAGEMENT AND BIO SAFETY

(CBCS – 2019 onwards)

Time : 3 Hours

Maximum : 75 Marks

Part A

(10 × 2 = 20)

Answer **all** questions.

1. Individual doctors should maintain the in-patient records for _____ years, from the date of commencement of treatment.
 - (a) 3
 - (b) 10
 - (c) 20
 - (d) 30

2. Abbreviate : SOAP
 - (a) Subjective, Objective, Assessment and Plan
 - (b) Subjective, Obstructive, Analysis and Plan
 - (c) Surgical, Obstructive, Assessment and Planning
 - (d) Survival, Objective, Analytical and Planning

3. Epidemiology has a crucial role in
 - (a) Identifying risk factors
 - (b) Promoting sickness
 - (c) Increasing pathogens
 - (d) Deal with opportunistic pathogens

4. POSDCORB stands for _____.
- (a) Planning, Organizing, Staffing, Directing, Co-ordinating, Reporting and Budgeting
 - (b) Plan, Organize, Staff, Deal, Course, Report and Board
 - (c) Purchase, Organize, Surgery, Deal, Census, Recognize and Board
 - (d) Perfect, Organize, Staff, Direct, Co-ordinate, Recognize and Budget
5. Hygiene and cleanliness are crucial factors for building a medical facility – state True or False.
6. The board of directors is a _____ regulatory body, that help hospital make higher level organizational decisions.
- (a) Governing (b) Academic
 - (c) Non-governing (d) Non-academic
7. Type B hospitals provide _____ care services.
- (a) Primary and secondary
 - (b) Primary
 - (c) Secondary
 - (d) Tertiary
8. Quality assurance means maintaining a _____ quality of health care by measuring the effectiveness of the organizations, that provide it.
- (a) high (b) medium
 - (c) low (d) poor

9. Red colour bins has _____.
- (a) Contaminated waste
 - (b) Non-contaminated waste
 - (c) Viruses
 - (d) Non-pathogenic bacteria
10. _____ is a process that burns medical waste in a controlled environment.
- (a) Incineration (b) Autoclaving
 - (c) Irradiation (d) Chemical reaction

Part B (5 × 5 = 25)

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

11. (a) Analyze the overall support and utility service management.

Or

- (b) Highlight the importance towards the evolution of management.

12. (a) Discuss about the management system, followed by the Indian hospitals.

Or

- (b) State the epidemiological basis of health care.

13. (a) Evaluate the basic principles in planning hospital facilities and services.

Or

- (b) Plan and construct the hospital building with a schematic sketch.

14. (a) List out and discuss the different types of hospitals.

Or

(b) What are the duties and responsibilities of various positions in hospital operational management?

15. (a) Construct the regulatory framework of GMO's.

Or

(b) Comment on bioethical issues, related to waste management.

Part C

(3 × 10 = 30)

Answer any **three** questions.

16. Analyse the duties and responsibilities of various positions in hospital operational management.

17. Evaluate the important consideration in maintaining the medical records in hospitals with neat framework.

18. Explain about Health Service Research and Managerial adaptations maintained in hospital management system.

19. Summarize the financial role in constructing the hospital . Add notes on legal requirements.

20. Critically analyze the waste disposal management strategies, adopted in hospitals with flowchart.