

<b>R-4651</b>
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<b>Sub. Code</b>
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<b>508201</b>
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**M.Sc.DEGREE EXAMINATION, APRIL 2021**

**Second Semester**

**Biomedical Science**

**MEDICAL BIOCHEMISTRY**

**(CBCS – 2019 onwards)**

Time : Three Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** the questions.

1. A short, rigid and planner bond that link consecutive amino acids is named as
  - (a) Covalent
  - (b) Peptide bond
  - (c) Hydrogen bond
  - (d) Sulphide Bond
2. Modification of proteins by addition of phosphate group is mediated with help of
  - (a) Kinase
  - (b) Amylase
  - (c) Proteinase
  - (d) Polymerases
3. Purine nucleotide biosynthesis can be inhibited by which of the following.
  - (a) GTP
  - (b) UMP
  - (c) AMP
  - (d) ATP

4. The conversion of Acetyl Co-A to Malonyl CO-A requires
- (a) Biotin
  - (b) ADP
  - (c) Folic acid
  - (d) NADPH
5. What amino acid is coded by the triplet of bases UAU?
- (a) Phenylalanine
  - (b) Serine
  - (c) Tyrosine
  - (d) Cysteine
6. RNA is a polymer of purine and pyrimidine nucleotides linked together by
- (a) 3' to 5' phosphodiester linkages
  - (b) 5' to 3' phosphodiester linkages
  - (c) Vanderwals force
  - (d) Hydrogen bonds
7. \_\_\_\_\_ is the midsection of the small intestine, connecting the duodenum to the ileum.
- (a) Jejunum
  - (b) Colon
  - (c) Micro villi
  - (d) None of the above
8. Suppresses glucagon secretion after eating; Slows gastric emptying and Reduces food intake.
- (a) Insulin
  - (b) Amylin
  - (c) Glucagon
  - (d) Asprosin

9. The rate of electron transfer when proton motive force is high is  
 (a) Faster (b) Slower  
 (c) Moderate (d) None
10. A muscle fibre relaxes when:  
 (a) The nerve stimulus is removed  
 (b) The nerve stimulus is too forceful  
 (c) The actin binding sites are uncovered  
 (d) The actin binding sites are saturated

**Part B** (5 × 5 = 25)

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

11. (a) How does the RBC cell metabolize carbohydrates?  
 Or  
 (b) What is oxidative metabolism?
12. (a) Write short notes about the biosynthesis of fatty acids.  
 Or  
 (b) Discuss about the pathway of nucleotide degradation.
13. (a) Discuss about the neurotransmitters.  
 Or  
 (b) What is gene regulation? Explain it, with suitable examples.
14. (a) Discuss about the water and electrolytic homeostasis.  
 Or  
 (b) How does the lung regulate the acid base balance in body?
15. (a) Discuss in detail about the calcium homeostasis  
 Or  
 (b) Briefly explain about the process of inflammation.

**Part C** $(3 \times 10 = 30)$ Answer any **three** questions.

16. Describe in detail about the oxidative metabolism of lipids in liver and muscle cells.
  17. Write an essay about the biosynthesis and degradation of amino acids.
  18. Discuss in detail about the homeostasis of cell growth and cancer.
  19. Explain in detail about the diabetes mellitus.
  20. Discuss in detail about the characteristics and functions of plasma proteins.
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<b>Sub. Code</b>
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<b>508202</b>
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**M.Sc. DEGREE EXAMINATION, APRIL 2021**

**Second Semester**

**Biomedical Science**

**CLINICAL MICROBIOLOGY**

**(CBCS – 2019 onwards)**

Time : Three Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. The identification of bacteria by serologic tests is based on the presence of specific antigens. Which of the following bacterial components is least likely to contain useful antigens?
  - (a) Capsule
  - (b) Cell wall
  - (c) Flagella
  - (d) Ribosomes
2. In the classification of bacteria according to shape, which among the following refer to cuboidal arrangement of bacterial cells?
  - (a) Tetrads
  - (b) *Staphylococci*
  - (c) *Sarcinae*
  - (d) *Streptococci*

3. Which of the following bacteria has no flagella?
- (a) Amphitrichous
  - (b) Peritrichous
  - (c) Lophotrichous
  - (d) Atrichos
4. \_\_\_\_\_ are classified on the basis of hemolysis,  $\alpha$ -hemolysis,  $\beta$ - hemolysis and no- hemolysis group.
- (a) *Streptococci*
  - (b) *Proteus*
  - (c) *E. coil*
  - (d) *Klebsiella*
5. \_\_\_\_\_ is a parasite whose host, often an insect, is also a parasite, often specifically a parasitoid.
- (a) Hyperparasite
  - (b) Endoparasite
  - (c) Ectoparasites
  - (d) None of the above
6. Trophozoites, Schizonts and gametocytes of all the malarial parasites are seen in the peripheral blood smear except;
- (a) *P. falciparum*
  - (b) *P. malariae*
  - (c) *P. ovale*
  - (d) *P. vivax*
7. The taxa having the ending – mycetes is \_\_\_\_\_
- (a) Division
  - (b) Subdivision
  - (c) Class
  - (d) Order

8. Most of the fungi stores the reserve food material in the form of
- (a) Starch
  - (b) Lipid
  - (c) Glycogen
  - (d) Protein
9. Provirus is
- (a) Free virus
  - (b) Free dna
  - (c) Primitive virus
  - (d) Integrated viral genome
10. Infectious RNA particle without protein coat
- (a) Viriod
  - (b) Virion
  - (c) Virusoid
  - (d) Prion

**Part B** (5 × 5 = 25)

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

11. (a) Briefly explain about the working principle of autoclave and hot air oven.
- Or
- (b) How will you control the hospital-acquired infections?
12. (a) Describe the lab diagnostic and treatment methods of *Salmonella* infection.
- Or
- (b) What is the difference between gram positive and Gram-negative bacteria?

13. (a) Write short notes About the pathogenesis of Mycobacterium.

Or

- (b) How will you prevent the Filariasis?

14. (a) Classify the type of dermatophyte infections.

Or

- (b) Write brief notes about the Opportunistic mycoses infection.

15. (a) What are the different stages of Dengue infection?

Or

- (b) Briefly explain about the signs and symptoms of the flu disease.

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Explain about the types of vaccine and immunization schedule.
17. How will you diagnose and treat *staphylococcus* and *Staphylococcus* infection.
18. Explain about life cycle, Pathogenesis, diagnosis and treatment of *Entamoeba* Sp infection.
19. Explain in detail about the morphology, Pathogenesis and diagnosis of the *Candida* Sp Infection.
20. Discuss the Pathogenesis, diagnosis, and treatment of the Hepatitis-B Infection.



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<b>508203</b>
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**M.Sc. DEGREE EXAMINATION, APRIL 2021**

**Second Semester**

**Biomedical Science**

**CLINICAL PATHOLOGY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. \_\_\_\_\_ is characterized as cytoplasmic swelling, irreversible damage to the plasma membrane, and organelle breakdown leading to cell death.  
(a) Necrosis                      (b) Coagulation  
(c) Cholestasis                  (d) DNA damage
2. The process of \_\_\_\_\_ occurs concurrently with fibroblast proliferation when endothelial cells migrate to the area of the wound.  
(a) Angiogenesis              (b) Macrophage regeneration  
(c) Vasodilation                (d) None of the above
3. Black water fever is a special manifestation of malaria caused by;  
(a) *P. falciparum*              (b) *P. malariae*  
(c) *P. ovale*                      (d) *P. vivax*

4. The specific binding of HIV to the CD4 surface molecules to the host cell membrane is brought about by
- (a) Gp 120                      (b) Gp41  
(c) P32                          (d) P55
5. Organ affected by pneumonia
- (a) Liver                        (b) Kidney  
(c) Heart                        (d) Lungs
6. Normal urine primarily consists of
- (a) Water, protein, and sodium  
(b) Water, urea, and protein  
(c) Water, urea, and sodium chloride  
(d) Water, urea, and bilirubin
7. More bilirubin is secreted into bile during haemolytic jaundice that may lead to increase formation of
- (a) Urobilinogen  
(b) Stercobilinogen  
(c) Both A and B  
(d) None of the above
8. Which of the following is a function of vitamin B12?
- (a) Synthesis of TMP (thymidine monophosphate)  
(b) Decarboxylation of amino acids to form amine neurotransmitters  
(c) Synthesis of methionine from homocysteine  
(d) Carboxylation of pyruvate to oxaloacetate

9. What are early signs and symptoms of rheumatoid arthritis (RA)?
- (a) Joint pain, tenderness, redness, and swelling
  - (b) Loss of joint range of motion
  - (c) Limping
  - (d) All of the above
10. Too much release of thyroid hormone in the body causes:
- (a) Hypothyroidism    (b) Hyperthyroidism
  - (c) Goitre                (d) None of the above

**Part B****(5 × 5= 25)**

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

11. (a) Write short notes about the edema.
- Or
- (b) Briefly explain about the fluid and electrolyte imbalances.
12. (a) What is the pathogenesis of the syphilis?
- Or
- (b) Discuss about the transmission modes of rabies and measles.
13. (a) What are the major components of a urinalysis for diseases diagnosis?
- Or
- (b) Write short notes about the gastric ulcer.

14. (a) What are all the early symptoms of Myasthenia gravis?

Or

- (b) How will you diagnose and treat Cholecystitis?

15. (a) Briefly explain about the rheumatoid arthritis.

Or

- (b) What are all the signs and symptoms of Osteomalacia?

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write an essay about the immunological basis of rejection in organ transplantation.
17. Discuss in detail about the congenital heart diseases.
18. Explain in detail about the acute, progressive and end stage renal diseases.
19. Discuss in detail about the diagnosis of liver and biliary tract diseases.
20. What is menstrual cycle? How the hormonal abnormalities influence its functions?

**R5484**

**Sub. Code**

**508503**

**M.Sc. DEGREE EXAMINATION, APRIL – 2021.**

**Second Semester**

**Biomedical Science**

**HOSPITAL MANAGEMENT AND BIOSAFETY**

**(CBCS – 2019 onwards)**

Time : 3 Hours

Maximum : 75 Marks

**Part A**

(10 × 2 = 20)

Answer **all** questions.

1. Hospitals can be classified into different categories based on
  - (a) Ownership
  - (b) type of service
  - (c) bed strength
  - (d) all the above
2. Hospital administrators are usually
  - (a) Medical men
  - (b) Non-medical administrator
  - (c) Senior nurse
  - (d) none of the above
3. Government hospitals are established and maintained by
  - (a) Municipal corporation
  - (b) Taluk
  - (c) District
  - (d) all the above

4. Hospital administrators able to create and accept new ideas and implement for the benefit of
  - (a) Doctors
  - (b) Nurses
  - (c) Patients
  - (d) all the above
5. A planning team of hospital design includes
  - (a) Civil engineers
  - (b) Medical architect
  - (c) Local body representative
  - (d) all the options
6. The total volume of the hospital building should be in terms of
  - (a) Plot ratio
  - (b) flat ratio
  - (c) land ratio
  - (d) none of the above
7. Hospital engineering services depends on
  - (a) Ventilation
  - (b) electricity
  - (c) Communications
  - (d) all of the above
8. The quality improvement committee generally works as an apex committee for a hospital preparing for
  - (a) Accreditation
  - (b) Quality improvement activity
  - (c) Best practices
  - (d) All the above
9. Medical wastes are
  - (a) Infectious items
  - (b) chemicals
  - (c) Radioactive items
  - (d) all the above

10. Segregating medical wastes based on their types helps ensure that each waste is
- (a) Discarded
  - (b) transported
  - (c) Destroyed
  - (d) all the options

**Part B** (5 × 5 = 25)

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

11. (a) Discuss the different functional areas of hospital management.

Or

- (b) Describe the evolution of hospital management.

12. (a) What are the challenges faced by the management of Indian hospital?

Or

- (b) How can we improve healthcare system in India?

13. (a) Discuss in detail the steps involved in hospital designing.

Or

- (b) Write legal issues in hospital and healthcare system.

14. (a) Discuss the responsibilities of quality assurance committee in hospital.

Or

- (b) Discuss the types of business organization in a hospital.

15. (a) Write the principle and concept of biosafety in hospital.

Or

- (b) What is medical ethics? Why it is important?

**Part C**

(3 × 10 = 30)

Answer any **three** questions.

16. Write current and future human resource issues in health care industry.
17. Why hospital moving towards intergrading more market research ongoing basis? What are the best ways to conduct ongoing market research in healthcare?
18. Describe the planning and infrastructure facilities of operational unit in specialty hospital.
19. Discuss the steps to be implement for the quality management system to run a specialty hospital.
20. Narrate common occupational hazards found in hospital environment and write the preventive measures of the same.