

## P.G.D.M.L.T. (Sem.-1) Examination

PGDMLT 401

Bio-Chemistry

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

**Instructions:**

All questions are compulsory.

Illustrate your answers with neat diagrams wherever necessary.

**Que. 1 (A) Write the following:**

- (i) Enlist the classification of enzyme with suitable examples. [7]
- (ii) Give brief introduction about hormones and write about any one hormone. [7]

**OR**

- (i) Write a note on hormone control of blood sugar. [7]
- (ii) Write a note on fat soluble vitamins. [7]

**Que. 1 (B) Answer the following (any four out of six):**

[4]

- (i) What is hypoglycemic condition?
- (ii) The simplest amino acid having only a single hydrogen for an R group is \_\_\_\_\_.
- (iii) Sunshine vitamin is \_\_\_\_\_.
- (iv) The absorption maxima of nucleic acid is near \_\_\_\_\_ nm.
- (v) For preparation of 50% NaCl by (w/v) \_\_\_\_\_ grams of NaCl is to be dissolved in 1L of water.
- (vi) What is feedback inhibition?

**Que. 2 (A) Write the following:**

- (i) Write a short note on electron transfer chain (ETC) with oxidative phosphorylation. [7]
- (ii) Write a note on digestion and absorption of lipids. [7]

**OR**

- (i) Classify lipids with suitable examples. [7]
- (ii) Describe briefly on DNA and RNA. [7]

**Que. 2 (B) Answer the following (any four out of six):**

[4]

- (i) Write the full form of BUN, ALT.
- (ii) Due to which vitamin deficiency Spina bifida defect occurs?
- (iii) Excess of somatotropin leads to \_\_\_\_\_.
- (iv) Define term  $K_m$  and  $V_{max}$  for enzyme kinetic curve.
- (v) Hydrogen: oxygen atom ratio in carbohydrate is \_\_\_\_\_.
- (vi) What is the clinical application of creatine kinase?

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**Que. 3 (A) Write the following:**

- (i) What is kwashiorkor? What are its symptoms and how can it be prevented. [7]
- (ii) Explain agglutination reaction with various method. [7]

**OR**

- (i) Describe any three clinically important enzymes with their role in the body? [7]
- (ii) What is marasmus? What are its symptoms and how can it be prevented. [7]

**Que. 3 (B) Answer the following (any three out of five):**

[3]

- (i) What is BMR?
- (ii) Define pH and buffer both terms.
- (iii) \_\_\_\_\_ is the SI unit for measurement of radioactivity.
- (iv) Write down the function of potassium in human body?
- (v) Major cation in ECF is \_\_\_\_\_.

**Que. 4 (A) Write the following:**

- (i) Explain the agarose gel electrophoresis experiment unit process with steps. [7]
- (ii) Explain colorimetry with lambert beer law. [7]

**OR**

- (i) Automation for sample collection, identification and preparation in laboratory. [7]
- (ii) Write a note on a chemiluminescence. [7]

**Que. 4 (B) Answer the following (any three out of five):**

[3]

- (i) Types of antibody used are \_\_\_\_\_ & \_\_\_\_\_.
  - (ii) Normal pH of the human body is \_\_\_\_\_.
  - (iii) Explain the term "absorbed light" with equation?
  - (iv) What is the application of affinity chromatography?
  - (v) Give the full form of CRP and its importance.
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## P.G.D.M.L.T. (Sem.-1) Examination

## PGDMLT 402

## Hematology and Blood Bank Technique

Time : 2-30 Hours]

March 2019

[Max. Marks : 70

**Que. 1 (A) Write the following:**

- (i) Explain the care of donors after donation. [7]
- (ii) Describe various methods for measuring ESR. [7]

**OR**

- (i) Write a note on making a peripheral blood smear. [7]
- (ii) Describe an anemia. [7]

**Que. 1 (B) Answer the following (any four out of six):**

- (i) Life span of RBCs is \_\_\_\_\_ days. [4]
- (ii) HbA is comprised of \_\_\_\_\_.
- (iii) The minimum interval between two whole blood donations should be \_\_\_\_\_ months.
- (iv) Give the full form MCV and MCH.
- (v) Substance leading to production of antibody is \_\_\_\_\_.
- (vi) Monoblast mature into \_\_\_\_\_.

**Que. 2 (A) Write the following:**

- (i) Explain the formation of platelets. [7]
- (ii) Describe immediate immunological reactions. [7]

**OR**

- (i) Write short notes on thalassemia major. [7]
- (ii) Write a note on hereditary spherocytosis. [7]

**Que. 2 (B) Answer the following (any four out of six):**

- (i) If group O blood is transfused to a patient with group A it is preferable to give \_\_\_\_\_. [4]
- (ii) Iron in macrophages is bound to a protein called as \_\_\_\_\_.
- (iii) Folic acid deficiency in pregnancy causes \_\_\_\_\_ in new born baby.
- (iv) \_\_\_\_\_ test is used for quantifying the enzymes.
- (v) The highly specific types of ELISA is \_\_\_\_\_.
- (vi) Normal thrombin time is \_\_\_\_\_.

**Que. 3 (A) Write the following:**

- (i) Write a short note on screening test for malaria. [7]  
 (ii) List the types of antiglobulin test. [7]

**OR**

- (i) Describe diagnostic tools in leukaemia. [7]  
 (ii) Write a note on common bleeding problems. [7]

**Que. 3 (B) Answer the following (any three out of five):****[3]**

- (i) The collected blood is screened for all except \_\_\_\_\_.  
 (ii) The anticoagulant used for complete blood counts is \_\_\_\_\_.  
 (iii) \_\_\_\_\_ is an acidic dye used in staining.  
 (iv) Earliest morphologically identified cell is \_\_\_\_\_.  
 (v) Red cell sedimentation dependence on the difference in specific gravity between \_\_\_\_\_ & \_\_\_\_\_.

**Que. 4 (A) Write the following:**

- (i) Write a note on blood components. [7]  
 (ii) Explain briefly the pathogenesis of hemolytic disease of new born. [7]

**OR**

- (i) Describe the structure of haemoglobin and explain various laboratory methods for estimation of haemoglobin. [7]  
 (ii) Describe the methods of compatibility testing. [7]

**Que. 4 (B) Answer the following (any three out of five):****[3]**

- (i) Rh antigens are only located on \_\_\_\_\_.  
 (ii) Bilirubin is excreted as \_\_\_\_\_.  
 (iii) FAB classification stands for \_\_\_\_\_.  
 (iv) Absence of phospholipid release causes \_\_\_\_\_ syndrome.  
 (v)  $\beta$  thalassemia is \_\_\_\_\_ type inherited disorder.

## P.G.D.M.L.T. (Sem.-1) Examination

## PGDMLT 404

## Histology and Cytology

Time : 2-30 Hours]

March 2019

[Max. Marks : 70

**Instructions:**

All questions are compulsory.

Illustrate your answers with neat diagrams wherever necessary.

**Que. 1 (A) Write the following:**

- (i) Describe H & E stain properties and methods for staining. [7]
- (ii) Explain the types of moulds for embedding with advantages and disadvantages. [7]

**OR**

- (i) What is fixative? Name common and three special fixative agents. [7]
- (ii) Explain various types of embedding media and explain in brief. [7]

**Que. 1 (B) Answer the following (any four out of six):**

[4]

- (i) Give the types of commonly used additives.
- (ii) Most commonly used clearing agent is \_\_\_\_\_.
- (iii) Define microtome.
- (iv) Enlist types of embedding media.
- (v) Process of removing excess dye is called \_\_\_\_\_.
- (vi) What should be the optimum pH of fixative to preserve good morphology?

**Que. 2 (A) Write the following:**

- (i) Explain briefly masson fontana silver staining. [7]
- (ii) Describe ziehl neelsen stain. [7]

**OR**

- (i) Explain an electron microscope. [7]
- (ii) Explain the procedure of metachromasia. [7]

**Que. 2 (B) Answer the following (any four out of six):**

[4]

- (i) \_\_\_\_\_ staining is used to demonstrate the presence of argentaffin granules.
- (ii) Tissues demonstrated by metachromatic stain are \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_.
- (iii) Metachromasia is enhanced when \_\_\_\_\_ are reduced.
- (iv) Lipoproteins may be demonstrate on \_\_\_\_\_ section.
- (v) Periodic acid schiff stain is used to demonstrate \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_.
- (vi) Examples of strong inorganic acids are \_\_\_\_\_ & \_\_\_\_\_.

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**Que. 3 (A) Write the following:**

- (i) Write three indications of cryosections. [7]
- (ii) What are the procedures used to detect DNA and RNA? [7]

**OR**

- (i) What are the various methods of antigen detection in histopathology? [7]
- (ii) Describe decalcification. [7]

**Que. 3 (B) Answer the following (any three out of five):** [3]

- (i) Technique used for identifying cellular constituents by means of antigen antibody interaction is \_\_\_\_\_.
- (ii) Tissues can be fixed with \_\_\_\_\_.
- (iii) Ribonucleic acid is located in \_\_\_\_\_ of cells.
- (iv) The universal stain for cytological preparation is the \_\_\_\_\_.
- (v) All specimens should be stored in \_\_\_\_\_ solution.

**Que. 4 (A) Write the following:**

- (i) What are the steps involved in mounting a specimen? [7]
- (ii) Explain the steps involve in cervical cancer screening. [7]

**OR**

- (i) Enumerate the various measures of quality assurance. [7]
- (ii) Describe the FNAC. [7]

**Que. 4 (B) Answer the following (any three out of five):** [3]

- (i) \_\_\_\_\_ stain is used for identification of glycogen, fungal wall.
- (ii) Test records must be retained for at least \_\_\_\_\_ years.
- (iii) \_\_\_\_\_ are found mainly in organs of the digestive tract and associated glands.
- (iv) The lenses in electron microscopy are \_\_\_\_\_.
- (v) The degree of maturation of the squamous epithelium of the female genital tract depends on \_\_\_\_\_ hormones.

## P.G.D.M.L.T. (Sem.-1) Examination

PGDMLT 403

Microbiology

March 2019

Time : 2-30 Hours]

[Max. Marks : 70

**Instructions:**

All questions are compulsory.  
Illustrate your answers with neat diagrams wherever necessary.

**Que. 1 (A) Write the following:**

- (i) Describe various methods of isolation. [7]  
(ii) Describe growth curve with labelled graph. [7]

OR

- (i) Name the types of media and explain any three types in detail with suitable example. [7]  
(ii) Explain in detail staining used to detect *Mycobacterium tuberculosis*. [7]

**Que. 1 (B) Answer the following (any four out of six):**

[4]

- (i) Give any two examples of gram-negative bacteria.  
(ii) *Bacilli* seen in large number is known as \_\_\_\_\_ disease.  
(iii) Leprosy is caused by \_\_\_\_\_.  
(iv) \_\_\_\_\_ takes place in the cytosol of ribosomes.  
(v) Shape of *Pseudomonas* is \_\_\_\_\_.  
(vi) \_\_\_\_\_ agar is used as a selective medium.

**Que. 2 (A) Write the following:**

- (i) Classify *Pseudomonas* with morphological characteristics. [7]  
(ii) Describe the colonies and morphology of *Enterobacter*. [7]

OR

- (i) Describe the morphology of *Salmonella* and its infection prevention. [7]  
(ii) Write the characteristics of antigen in detail. [7]

**Que. 2 (B) Answer the following (any four out of six):**

[4]

- (i) Which is the widely used media for vibrio cholera?  
(ii) *E. coli* required \_\_\_\_\_ in media.  
(iii) *Klebsiella* commonly causes \_\_\_\_\_, \_\_\_\_\_ & \_\_\_\_\_.  
(iv) \_\_\_\_\_ tube is used for H. agglutination.  
(v) *Shigellae* is divided as \_\_\_\_\_ & \_\_\_\_\_ species.  
(vi) What is the use of sterilization?

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**Que. 3 (A) Write the following:**

- (i) Briefly describe the principle and method of indirect ELISA with diagram. [7]
- (ii) Write a note on a structure and class of immunoglobulins. [7]

**OR**

- (i) Write a short note on relapsing fever. [7]
- (ii) Explain genus *Proteus* and cultural characteristics of it. [7]

**Que. 3 (B) Answer the following (any three out of five):** [3]

- (i) Which organism causes a visceral disease kala azar?
- (ii) Helminths are further classified into \_\_\_\_\_ & \_\_\_\_\_.
- (iii) \_\_\_\_\_ cells mature in bone marrow.
- (iv) Which type of the antibody is synthesized by fetus?
- (v) \_\_\_\_\_ cells destroy tumor and virus infected cells.

**Que. 4 (A) Write the following:**

- (i) Describe the life cycle of malarial parasite with different stages. [7]
- (ii) Explain the principle of immunofluorescence with their application. [7]

**OR**

- (i) Describe the working of an autoclave in a flow chart. [7]
- (ii) Describe the characteristics of family *Rickettsiaceae*. [7]

**Que. 4 (B) Answer the following (any three out of five):** [3]

- (i) Most common example of agglutination is testing for is \_\_\_\_\_.
  - (ii) \_\_\_\_\_ induces phagocytosis.
  - (iii) Name proteus refers to \_\_\_\_\_.
  - (iv) *E. coli* is a consistent inhabitant of the \_\_\_\_\_ tract.
  - (v) The smallest unit of antigenicity is known as \_\_\_\_\_.
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