

**PG (NEW) CBCS**  
**M.Sc. Semester-I Examination, 2019**  
**MMLT**  
**PAPER: MMLT-102**  
**(Haematology & Serology)**

**Full Marks: 40****Time: 2 Hours**

- 1. Answer any four questions of the following questions: 2×4=8**
- a) Name two physiological important substances secreted from basophil. Mention their main functions. 1+1=2
- b) What do you mean by 'tropical eosinophilia'? How can it be controlled? 1+1=2
- c) Name one marker enzyme each of neutrophil and eosinophil. 1+1=2
- d) Name the precursor of platelet formation and the hormone that stimulates the formation. Mention two characteristics of the precursors. 1+1=2
- e) Cite one example each of i) normocytic and normochromic ii) microcytic and hypochromic iii) macrocytic and hypochromic and iv) haemolytic anaemia. 0.5\*4=2
- f) What is 'Castle's intrinsic factor'? What is the consequence of its deficiency? 1+1=2
- g) What does 'polycythemia' refer to? What is its common cause? 1+1=2
- h) Define leucopenia. Cite an example. 1+1=2
- 2. Answer any four questions of the following questions: 4×4=16**
- a) Give an outline of classification of leukemia.
- b) Write a short note on the i) causes ii) symptoms iii) blood picture and iv) control of iron deficiency anaemia. 1+1+1+1=4
- c) S-ELISA is preferred over C-ELISA-Explain.
- d) What is meant by an 'autoimmune haemolytic anaemia'? Explain the principle of 'direct Coombs' test. 1+3=4
- e) Explain the principle of 'Mantoux test'. How will you interpret the results of the test? 3+1=4
- f) Precisely describe the working principle of VDRL test. Comment on the limitation of the test. 3+1=4
- g) Why is CRP test considered to be a non-specific test? Precisely describe the working principle of the test. 1+3=4
- h) Mention at least two differences between 'O' and 'H' antigens of typhoid bacteria. State the principle of widal test. 2+2=4
- 3. Answer any two questions of the following: 8×2=16**
- a) How will you microscopically distinguish between i) a bilobed neutrophil and an eosinophil and ii) neutrophils of a man and neutrophils of a woman? Explain the principle of Arneth count. What is the normal value of Arneth count? What indications are given by 'left shift' and 'right shift' from normal arneth count? 2+3+1+2=8

- b)** What do you mean by leukemoid reaction and chronic myeloid leukemia? As a medical laboratory technician, mention two microscopic tests by which you will differentiate 'leukemoid reaction' from 'chronic myeloid leukemia'. What is 'Philadelphia chromosome' and how was it correctly identified? CML has become the first cancer in which a standard medical treatment may give to the patient a normal life expectancy-comment on the statement. **2+2+2+2=8**
- c)** Where does erythropoiesis take place in fetal and adult life of man? Present the cell lineage found in erythropoiesis by the help of a neat diagram. Mention the name, source, chemical nature and target of the hormone that stimulates erythropoiesis. **2+4+2=8**
- d)** Elaborate the working principle of MAC ELISA for Dengue. Comment on its diagnostic value. Which day of a year has been chosen as 'International Anti-Dengue Day'? What do you mean by 'Dengue NS1 antigen positive'? **5+1+1+1=8**

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**PG (NEW) CBCS**  
**M.Sc. Semester-I Examination, 2018**  
**BOTANY**  
**PAPER: BOT-101**  
**(Microbiology)**

**Full Marks: 40**

**Time: 2 Hours**

**1. Answer any four questions:**

**2×4=8**

- i) Name the components of nitrogenase enzymes.
- ii) What are the different types of T-cells?
- iii) What are positive and negative strand of RNA virus?
- iv) What is Salk vaccine?
- v) How does the prokaryotic flagella differs from eukaryotic flagella?
- vi) What are prions? Give example of a disease caused by it?
- vii) What are agglutination reactions?
- viii) Give example of two water borne disease along with their causal organism.

**2. Answer any four questions:**

**4×4=16**

- i) Discuss the structural organization of HIV and mention its importancy.
- ii) Mention the procedure of food sterilization for preventing microbial contamination.
- iii) Distinguish between the structure and function of flagella and pili.
- iv) Discuss the process of direct ELISA. **4**
- v) What is sexduction? Compare  $F^-$ ,  $F^+$ , Hfr and  $F'$ .
- vi) Write down the process of beer production.
- vii) What do you mean Diauxic growth? How does batch culture differ from continuous culture? **2+2=4**
- viii) Draw and discuss ultrastructure of Gram negative bacterial cell wall. **4**

**3. Answer any two questions:**

**8×2=16**

- i) Why moist heat is more effective than dry heat? State the different principles for formulation of media. Explain diauxic growth curve. **2+2+4=8**

- ii)** Describe briefly the different stages of endospore formation in Bacillus species. How does endospore formation is regulated? **6+2=8**
- iii)** Compare specialized and generalized transduction. Discuss interrupted mating experiment for gene mapping in bacteria. **3+5=8**
- iv)** What are late proteins? Mention regulation for lysogenic cycle. How animal viruses are cultivated in laboratory? **2+2+4=8**

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