MBBS I (First) Professional Examination 2018-19

Course Code: MBS103 **Paper ID**: 03219242

Biochemistry -II

Time: 2 Hours 40 Minutes **Max Marks:** 40

Note: Attempt all questions. Draw proper diagrams to support your answer.

Part 'B'

1. Discuss the process of transcription in eukaryotes with reference to promoter and termination sequences. Explain its activation by at least two important activators. (10)

2. a) What is the active form of vitamin D and how it is formed? Explain the role of calcitriol in regulation of serum calcium level. (5)
   b) Mention sources, daily requirement and biologically active forms of folic acid. How is it involved in one-carbon metabolism? Enlist folate antagonists and explain their clinical significance. (5)

3. Briefly describe the following: (2.5x4=10)
   a) Immunologic dysfunction in AIDS
   b) Renin – Angiotensin Aldosterone system
   c) List the important tumor markers
   d) Protein misfolding and diseases related to it.

4. Write short notes on the following: (2.5x4=10)
   a) Role of cytochrome P_{450} in hydroxylation reactions
   b) Renal function tests
   c) DNA melting
   d) (PUFA) Poly Unsaturated Fatty Acids

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Roll No. | | | | | | | | | | |

Student's Name

Student's Signature

Invigilator's Signature

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Biochemistry - II

Part 'A'

Time: 20 Minutes **Max Marks:** 10

Note: 1. Attempt all questions and return this part of the question paper to the invigilator after 20 Minutes.
2. Please tick (√) correct one only. Cutting, overwriting or any other marking are not allowed.
3. For answering please use Ball- pen only.

c) DNA polymerase beta
d) Catalase

Q.2 The sequence CCA occurs at the 3'-end of :
a. rRNA
b. mRNA
c. tRNA
d. snRNA

Q.3 Erythrocyte transketolase activity is decreased in:
a) Pellagra
b) Beriberi
c) Pernicious anemia
d) Megaloblastic anemia

Q.4 Which one of the following is not a feature of cellular DNA replication:
a) Semi-conservative
b) Chain growth in 3´to 5´direction
c) Bidirectional
d) Semi-discontinuous

Q.5 Which one of the following is encoded by the genome:
a) Beta-alanine
b) Hydroxyproline
c) Selenocysteine
d) Hydroxylysine

Q.6 Which of the following is not a component of the cell's suite of damage repair and prevention agents:
a) Superoxide dismutase
b) Glutathione
c) Isoaspartyl methyltransferase
d) Catalase

Q.7 Which of the following vitamins provides the cofactor for reduction reactions in fatty acid synthesis :
a) Folate b) Niacin
c) Riboflavin d) Thiamin

Q.8 Which living organism has the smallest genome:
a) E. coli
b) Staphloccus
c) Salmonella

Q.16 Which among the following immunoglobulins is the first to be synthesized by neonats:
a) IgA
b) IgM
c) IgD
d) IgG

Q.17 Which of the following is the central molecule and major opsonin of complement pathway:
a) Cl
b) C_2
c) C3b
d) C_5

Q.18 Name the class of MHC which is recognized by CD4 TH cell:
a) MHC cannot recognize T cells
b) MHC III
c) MHC I
d) MHC II

Q.19 Immunologic memory is provided by:
a) B cells and T cells
b) Macrophages
c) NK cells
d) Phagocytes

Q.20 Methylation of DNA is important in which DNA repair pathway:
a) Direct repair
b) Recombinational repair
c) Nucleotide excision repair
d) Mismatch repair

d) Termination

Q.10 replication requires the following except:
a) DNA ligase
b) The 3´- 5´exonuclease activity
c) A free 5´OH
d) Topoisomerase activity

P.T.O.

Q.11 The vitamin absent in plant source is:
a) Cobalamin
b) Folic acid
c) Thiamine
d) Riboflavin

Q.12 In humans' the Epstein Barr virus is associated with:
a) Carcinoma
b) Naso-pharyngeal carcinoma
c) Carcinoma pancreas
d) Hepato-biliary carcinoma

Q.13 Significant increase in alkaline posphatase and conjugated bilirubin levels in blood are indicators of:
a) Parenchymal liver disease
b) Cholestatic liver disease
c) Inflammatory liver disease
d) None of the above

Q.14 The antigen specificity of a particular B cell:
a) is induced by interaction with antigen
b) is determined only by the L-chain sequences
c) is determined by H+L-chain variable region sequence
d) Change after isotype switching

Q.15 The complement activity is abolished if serum is incubated for 30 min at:
a) 37 °C
b) 54 °C
c) 56 °C
d) 72 °C