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# RAN-3705

## Medical Faculty 1st MBBS Biochemistry Examination

### March / April - 2019

### Biochemistry Theory – Paper 2

સૂચના : / Instructions

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
Fill up strictly the details of signs on your answer book

Name of the Examination:

Name of the Subject :

Subject Code No.:

Seat No.:

     

Student's Signature

### SECTION - I

**Q-1 Short notes (2 out of 3)**

**08 marks**

- Tertiary structure of protein
- mRNA
- Thalassemia

**Q-2 Describe in brief (4 out of 6)**

**12 marks**

- Xenobiotics metabolism
- Isoenzymes of diagnostic importance
- Transaminase and glutamate dehydrogenase
- DNA fingerprinting
- Noncompetitive enzyme inhibition
- Post translational modification of collagen

**Q-3 Answer in one or two lines (5 out of 6) 05 marks**

- tRNA
- Urea cycle
- Role of recombinant DNA technology in medicine
- Genetic code
- Proinsulin, Insulin, Pre-pro insulin (arrange in increasing order of size)
- Protein energy malnutrition

### SECTION - II

**Q-4 Clinical Case with 5 questions 10 marks**

A 45 year old man presented with severe pain and weakness. He had repeated infection and fever off-an-on.

His bone marrow biopsy showed an excess of plasma cells. His serum total protein was 9.8 gm/dL and Albumin was 2.0 gm/dL. Serum electrophoresis showed sharp abnormal band between beta globulin and gamma globulin. On Immunofixation test, the sharp band was found to be made up of only IgA with only kappa light chain. Free kappa light chain were very high as compared to free lambda chain in serum. Multiple myeloma was diagnosed. Treatment with proteasome-inhibitor (Bortezomib) and Thalidomide-group of drugs was started.

- Interpret serum albumin, globulin and A/G ratio in the patient.
- Explain relationship of kappa and lambda light chain with structure of IgG.
- Which of the tests done in this patient indicate presence of "M-Band"? Why it is called "M Band"
- Write function of proteasome in cell?
- Write this patient's total protein and albumin results in gm/L units.

**Q-5 Answer in few lines (5 out of 7) 10 marks**

- 5-fluorouracil is an anticancer drug
- Bilirubin is not found in urine of patients with hemolytic jaundice
- Osteogenesis imperfecta
- Phenylbutyrate is used in treatment of hepatic encephelopathy



- e) At high altitude, RBC 2-3 BPG is increased.
- f) Dietary fibers are essential components of food.
- g) Histidine in hemoglobin is good buffer.

**Q-6 Answer in one or two lines (5 out of 6)**

**05 marks**

- a) Iron absorption
- b) Nucleotide excision repair
- c) Feedback regulation of enzymes
- d) Telomerase
- e) stem cell therapy
- f) DNA damage

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