



## BRAINWARE UNIVERSITY

Term End Examination 2024-2025

Programme – B.Sc.(PA)-2022/B.Sc.(PA)-2023/B.Sc.(PA)-2024

Course Name – Hematology & Clinical Biochemistry

Course Code - BPAC203

( Semester II )

Full Marks : 60

Time : 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

### Group-A

(Multiple Choice Type Question)

1 x 15=15

1. Choose the correct alternative from the following :

(i) Indicate the aldose sugar out of followings-

- |                |                     |
|----------------|---------------------|
| a) Glycerose   | b) Ribulose         |
| c) Erythrulose | d) Dihydroxyacetone |

(ii) Identify the purine nucleotide out of following options -

- |        |        |
|--------|--------|
| a) AMP | b) UMP |
| c) CMP | d) TMP |

(iii) Report the correct example of a saturated fatty acid -

- |                  |                |
|------------------|----------------|
| a) Palmitic acid | b) Oleic acid  |
| c) Linoleic acid | d) Erucic acid |

(iv) Indicate the correct statement related to Fischer's 'lock and key' model of the enzyme action -

- |  |   |
|--|---|
| a) The active site is complementary in shape to that of substance only after interaction | b) The active site is complementary in shape to that of substance |
| c) Substrates change conformation prior to active site interaction                       | d) The active site is flexible and adjusts to substrate           |

(v) Report the correct option Deficiency of vitamin D causes-

- |                            |                         |
|----------------------------|-------------------------|
| a) Ricket and osteomalacia | b) Tuberculosis of bone |
| c) Hypothyroidism          | d) skin cancer          |

(vi) Indicate the correct part of Antigen that reacts with the Antibody :

- |             |                  |
|-------------|------------------|
| a) paratope | b) epitope       |
| c) isotope  | d) none of these |

- (vii) Indicate the correct one. All the indices are increased in macrocytic anemia except-
- |         |        |
|---------|--------|
| a) MCV  | b) PCV |
| c) MCHC | d) MCH |
- (viii) Indicate the correct option :Maximum age for a first time blood donor is;
- |           |           |
|-----------|-----------|
| a) 50 yrs | b) 60 yrs |
| c) 40 yrs | d) 45 yrs |
- (ix) Predict which one is true,Blood bag is disposed of in ;
- |              |               |
|--------------|---------------|
| a) Red bag   | b) Yellow bag |
| c) green bag | d) Black bag  |
- (x) Select the true option.All of the following infections may be transmitted via blood transfusion, except:
- |              |                    |
|--------------|--------------------|
| a) Parvo B19 | b) Dengue virus    |
| c) hepatitis | d) cytomegalovirus |
- (xi) Identify the correct option. The instrument used not to measure the color intensity of a solution is:
- |                     |                |
|---------------------|----------------|
| a) Auto analyser    | b) colorimeter |
| c) semiautoanalyser | d) photometer  |
- (xii) Identify the correct option. The wavelength range of the UV spectrum is -
- |                      |                      |
|----------------------|----------------------|
| a) 100 nm to 500 nm  | b) 200 nm to 800 nm  |
| c) 300 nm to 1000 nm | d) 400 nm to 1600 nm |
- (xiii) Write the true facts about blood transfusions:
- |   |   |
|---|---|
| a) Antigen 'D' determines Rh positivity   | b) Febrile reaction is due to HLA antigens          |
| c) Anti-d is naturally occurring antibody | d) Cryoprecipitate contains all coagulation factors |
- (xiv) Select which one is correct. Formation of blood cell is called?
- |                |                        |
|----------------|------------------------|
| a) Mitosis     | b) Hemopoiesis         |
| c) Homeostasis | d) Complement Fixation |
- (xv) Select which one is correct.Normal Hct range
- |            |                      |
|------------|----------------------|
| a) 55 - 70 | b) 26 - 36           |
| c) 39 - 49 | d) None of the these |

#### Group-B

(Short Answer Type Questions)

3 x 5=15

2. Name two non vitamin coenzymes. (3)
3. Explain the Michaelis-Menten constant. (3)
4. Write about Bombay Blood group. (3)
5. Name the dietary sources of vit A and vit D. (3)
6. Write the working principle of spectrophotometer. (3)

OR

Distinguish between a single beam and double beam spectrometer. (3)

#### Group-C

(Long Answer Type Questions)

5 x 6=30

7. Describe the structure of DNA double helix. (5)
8. Describe about reversible inhibition. (5)

9. In reference to glyceraldehyde explain D- and L- isomers. (5)  
10. Write down the biochemical function of Vit A. (5)  
11. Enumerate the enzymes in myocardial infarction. (5)  
12. Explain different types of centrifugation. (5)

OR

Differentiate between Colorimeter and spectrophotometer. (5)

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