2021
PHYSIOLOGY
[HONOURS]
Paper : IV

Full Marks : 75 Time : 4 Hours

The figures in the right-hand margin indicate marks.

Candidates are required to give their answers in their own words as far as practicable.

GROUP–A

1. Answer any **five** questions: 1×5=5

   a) Name any two essential fatty acids.

   b) Define SDA of protein.

   c) Write the full form of PEP-CK.

   d) What do you understand by D and L forms of glucose?

   e) What is ketonemia?

   f) What is retrovirus?

   g) Name the rate limiting enzymes of glycolysis.

GROUP–B

2. Answser any **six** questions: 2×6=12

   a) What are the significances of HMP-shunt pathway?

   b) Write two important functions of folic acid.

   c) What do you understand by protein calorie malnutrition?

   d) What do you undersatand by ACU?

   e) What is Pasteurization?

   f) What is deamination?

   g) What are mesophilic bacteria? Give an example.

   h) What is oxidative phosphorylation?

GROUP–C

3. Answer any **three** questions: 6×3=18

   a) i) What is BMR?

      ii) How BMR is determined by Benedict's Roth apparatus? 2+4=6

   b) Describe the different enzymatic steps involved in the process of cysteine biosynthesis. 6

c) i) Write the sources and daily requirement of vitamin-C.

ii) Describe the functions of vitamin-C in brief. 1+1+4=6

d) i) TCA cycle is the final common pathway of metabolism– Justify the statement.

ii) Describe the anabolic role of TCA cycle. 2+4=6

e) Discuss briefly about the role of different nutrients on bacterial growth. 6

GROUP–D

4. Answer any **four** questions: 10×4=40

a) i) Describe the method of spore staining.

ii) Describe the importance of microbial fermentation in modern world. 5+5=10

b) i) How Many ATP will be evolved from the oxidation of one molecule of $NADH_2$ and one molecule of $FADH_2$?

ii) Describe the arrangement of the components of electron transport chain with suitable diagram. 2+8=10

c) i) What do you understand with iron-loaded?

ii) Mention minimum daily requirement of iron for humans.

iii) Write briefly about iron metabolism in our body. 2+2+6=10

d) i) Describe with suitable diagram the growth curve of bacteria.

ii) Write a note on Glyoxalate cycle. 5+5=10

e) i) Describe the biosynthetic pathway for the production of serotonin and melatonin.

ii) Write a note on Hartnup disease. 7+3=10

f) i) Describe the Rapoport-Luebering cycle.

ii) Discuss briefly about viral replication. 4+6=10

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