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UG/II/PHY/H/IV/17(New)

2017

PHYSIOLOGY

[Honours]

PAPER – IV

Full Marks : 90

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

Illustrate the answers wherever necessary

[NEW SYLLABUS]

GROUP – A

Answer any two taking one from each subgroup

Subgroup—A(a)

- 1. (a) How lactate is converted to phosphoenol pyruvate in mitochondria ?**

(Turn Over)

- (b) Discuss the role of lipoproteins in the transport of lipids.
- (c) How gastric wall is protected from acid peptic digestion ? 6 + 5 + 4
2. (a) Discuss the functions of retinol with special emphasis as an antioxidant.
- (b) Enumerate the importance of calcium in human body.
- (c) Discuss the factors controlling iron absorption in the alimentary canal. 5 + 5 + 5
3. (a) How coronary heart diseases can be controlled by dietary management ?
- (b) Prepare a balanced diet chart for Indian pregnant mother.
- (c) Write the utility of ORS, emphasizing on its composition. 6 + 6 + 3

Subgroup—A(b)

4. (a) Differentiate between Gm +ve and Gm -ve bacteria.

- (b) Discuss Entner-Doudoroff pathway with schematic chart.
- (c) What is chemosynthesis? 5 + 7 + 3
5. (a) How T-cell helps in humoral immunity?
- (b) Describe the various isotypes of an immunoglobulin.
- (c) Discuss the principles of ELISA. Mention its three importance. 4 + 4 + (4 + 3)
6. (a) Describe the process of acclimatization at high altitude.
- (b) Discuss the sources and technological control process of air pollution.
- (c) What do you mean by Xenobiotics? 6 + (2 + 4) + 3

GROUP – B

Answer any five, taking at least two from each subgroup

Subgroup-B(a)

7. (a) "Liver acts as a glucostat"— Justify.
- (b) What do you mean by choloretic and cholagogue functions ? 5 + 3
8. (a) How ammonia is transported to liver from distant organs for detoxification ?
- (b) Mention the functions of essential fatty acids. 5 + 3
9. (a) Discuss the physiological significance of Na^+ - K^+ balance.
- (b) How its homeostatis is maintained ? 2 + 6
10. (a) Discuss the role of catalase and SOD as an antioxidant.
- (b) What do you mean by alkaptonuria ? 5 + 3
11. (a) Discuss the process of Ketogenesis mentioning three conditions for this pathway.

- (b) What are the key features of Kwashiorkor ?
6 + 2

Subgroup-B(b)

12. Describe the important type of culture media used in laboratory. 6 + 2
13. (a) What is methanogenesis ? Define teratogen and neurotoxin.
- (b) Discuss the process of secondary treatment of sewage wasts. (2 + 2) + 4
14. (a) Describe the role of NK cells in combating infections.
- (b) Mention two cells producing MHC II protein. 6 + 2
15. (a) Discuss the process of Type-I hypersensitivity reaction.
- (b) Mention two autoimmune disorders of muscle. 6 + 2

16. (a) How does radiation affect human body ?
(b) Classify pollutants with example of each. 5 + 3

GROUP – C

Answer any **five**, taking at least **two** from each subgroup

Subgroup–C(a)

17. Mention the process of oxidative decarboxylation of pyruvate in detail. (Reaction step only). 4
18. What is familial hypercholesterolemia ?
Mention its effects. 2 + 2
19. Explain the role of folic acid in fetal development. 4
20. Illustrate the symptoms of pellagra. 4
21. Why colostrum is highly beneficial to neonates ? 4

Subgroup–C(b)

22. Name the bacteria for food spoilage and fermentation (*Two* for each). 2 + 2

23. What do you mean by immunomodulation?
Name two examples of Type-IV hypersensitivity. 2 + 2
24. What will be the effects of thymectomy in children? What is adjuvant? 2 + 2
25. What are the hazards of immunization? 4
26. What do you mean by carcinogen and mutagen? 4
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