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ABP/CCM-72/XIV

2015

ZOOLOGY

SECOND PAPER

Full Marks : 200

Time : 3 Hours

The figures in the margin indicate full marks for the questions

Group-A

(Marks : 100)

Answer Question No. 1 and **any three** from the rest.

1. Answer the following questions in brief :
(any five) $8 \times 5 = 40$
- (a) What is heterochromatin? How does it differ from euchromatin? $4 + 4 = 8$
- (b) Justify the statement "ontogeny repeats phylogeny" as evidence of evolution. 8
- (c) Write about the ultrastructure and function of mitochondria. $4 + 4 = 8$

Contd.

- (d) What is a fossil? Write about the characteristics of fossil and fossil dating. $4+4=8$
- (e) Discuss prophase stage of Meiosis and significance of crossing over. $4+4=8$
- (f) Write about the characteristics of genetic code. 8
- (g) Describe the ultrastructure and function of "synaptonemal complex". $4+4=8$
- (h) Differentiate between multiple alleles and multiple factors. Explain how they modify the Mendelian concept. $4+4=8$
2. Describe the physical and chemical properties of protoplasm. $10+10=20$
3. Discuss Darwin's theory of Natural Selection. Write the merits and demerits of the theory. Mention the principles of Neo-Darwinism. $10+4+6=20$
4. Describe the ultrastructure of nucleus with special reference to nuclear membrane, nuclear lamina and nuclear pore complex. Explain the origin of eukaryotic cell on the basis of Endosymbiotic theory. $12+8=20$
5. What is mutation? Describe different types of mutation and their significance. $2+12+6=20$

6. Describe the mechanism of translation in protein synthesis in prokaryotes. Discuss the role of different factors and enzymes involved in protein synthesis. $12+8=20$

Group-B

(Marks : 100)

Answer **any five** questions from the following.

7. What is carbohydrate ? Classify different types of carbohydrate and briefly state their functions. Explain the role of carbohydrates in the metabolism of animals. $4+8+8=20$
8. Describe the physiology of respiration in mammals. Write about its regulatory mechanism. $12+8=20$
9. Describe the zoo geographical realms of the world. Mention their characteristic fauna. $12+8=20$
10. Define fertilization. Discuss the events of fertilization. What is the significance of fertilization ? $2+12+6=20$
11. What is foetal membrane ? Write about the foetal membranes in chick with their functions. $2+12+6=20$

12. Describe the different components of blood.
Write about the mechanism of blood
coagulation. 12+8=20