2018

(October)

FISHERY SCIENCE

(Honours)

SIXTH PAPER (Paper—6A)

(Fish Physiology, Biochemistry and Applied Genetics)

Marks : 56

Time : 3 hours

The figures in the margin indicate full marks for the questions

Answer Question No. **1** which is compulsory and *any* **four** from the rest

1. Write short notes on any *three* of the following : 4×3=12

   (a) Live gene bank

   (b) Gas exchange across the fish gills

   (c) Selective breeding of fishes

(d) Classification of enzymes

(e) Ultrastructure of kidney of typical freshwater fishes

2. What are the advantages of cryopreservation of fish germplasm? Describe the methods in detail, in preservation of fish spermatozoa. 3+8=11

3. Describe the different techniques used for chromosomal manipulation for genetic improvement of Asiatic carp. 11

4. What are the major endocrine glands found in fish? Describe the structure of fish gonads and elaborate the functions of gonadal hormones. 3+8=11

5. Enumerate the structure and properties of different fish blood corpuscles and also explain their functions. 11

6. Define osmoregulation. Explain the osmoregulatory mechanisms in freshwater and marine water fishes. 3+8=11

7. Mention the different steps of TCA cycle giving enzymes and coenzymes involved in each step. 11

(Continued)

8. Write short notes on (any *two*) : 5½×2=11

(a) Hybridization of Indian major carp

(b) Conservation methods of fish genetic resources

(c) Mechanism of urine formation in fish kidney

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