## Odd Semester, 2020

( Held in March, 2021 )

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)* Regulation of enzyme activity

*(b)* Osmoregulation in brackish water fishes

*(c)* Fish haemoglobin

*(d)* Thyroid gland

*(e)* Genetic drift





**2.** Describe the different steps in the process of glycolysis mentioning the enzymes, coenzymes and cofactors involved in each step. 11

**3.** Describe the countercurrent oxygen exchange mechanism in fish. Mention the various factors affecting the gas exchange in fish. 5+6=11

**4.** Write the differences between *in situ* and *ex situ* conservation. Discuss the protocol used for cryopreservation of sperm in fishes. 4+7=11

**5.** Describe the structure of the pituitary gland in fish. Mention the functions of different hormones secreted by fish pituitary gland. 4+7=11

**6.** Explain the application of different techniques of chromosome manipulation in fish genetic improvement strategies. 11

**7.** Describe the composition of fish blood and explain the mechanism of blood circulation in fish. 5+6=11

**8.** Write short notes on any *two* of the following : 5½×2=11

*(a)* Corpuscles of Stannius

*(b)* Lipid metabolism

*(c)* Functions of gastrointestinal tract

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