PUNJAB PUBLIC SERVICE COMMISSION

COMBINED COMPETITIVE EXAMINATION
FOR RECRUITMENT TO THE POSTS OF
PROVINCIAL MANAGEMENT SERVICE, ETC -2021
CASE NO. 3C2022

SUBJECT: ZOOLOGY (PAPER-II)

TIME ALLOWED: THREE HOURS   **MAXIMUM MARKS: 100**

NOTE:
i.   All the parts (if any) of each Question must be attempted at one place instead of at different places.
ii. Write Q. No. in the Answer Book in accordance with Q. No. in the Q. Paper.
iii. No Page/Space be left blank between the answers. All the blank pages of Answer Book must be crossed.
iv. Extra attempt of any question or any part of the question will not be considered.

NOTE: **Attempt FIVE Questions in All Selecting ONE from each Section. Attempt in Urdu or English.**

SECTION-A

Q. No. 1.
a) Differentiate between reversible and irreversible enzyme inhibition.
b) Differentiate between catabolic and anabolic pathways of metabolism.
(10 + 10 = 20 Marks)

Q. No. 2.
a) Explain the series of chemical reactions occurring during Krebs cycle.
b) What is meiotic nondisjunction? What are its consequences for human beings?
(10 + 10 = 20 Marks)

SECTION-B

Q. No. 3.
a) How has excretion of nitrogenous wastes evolved in aquatic and terrestrial animals?
b) Which different mechanisms animals use to regulate the exchange of heat between themselves and the environment?
(10 + 10 = 20 Marks)

Q. No. 4.
a) Describe the motility of gastrointestinal tract in animals.
b) Name neurohormones released from the mammalian posterior pituitary gland (neurohypophysis), their target sites and functions.
(10 + 10 = 20 Marks)

SECTION-C

Q. No. 5.
a) Define multiple alleles. Explain a case example of multiple alleles.
b) Give a brief account of the recessive genetic disorders (recessively inherited disorders).
(10 + 10 = 20 Marks)

Q. No. 6.
a) What is a genetic code? Which general features characterize genetic code?
b) What are the transgenic animals? How are they produced and what are their uses?
(10 + 10 = 20 Marks)

SECTION-D

Q. No. 7.
a) How has Neo-Darwinism validated the Darwinism? Explain Darwin's theory in the light of Neo-Darwinism.
b) How natural selection leads to the formation of adaptations? Explain with an example.
(10 + 10 = 20 Marks)

Q. No. 8.
a) Differentiate between natural selection and genetic drift.
b) What is Hardy-Weinberg equilibrium? Explain different factors which act as sources of microevolutionary change.
(10 + 10 = 20 Marks)

SECTION-E

Q. No. 9.
a) Describe a closed ecological system.
b) Discuss the efficiency of energy transfer in ecosystems.
(10 + 10 = 20 Marks)

Q. No. 10.
a) How is nutrient cycling connected with pollution? Explain relationship between carbon cycle and global warming.

b) How do animals adapt themselves to their habitats? What are animals' adaptations to desert environment?
(10 + 10 = 20 Marks)

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