BOARD QUESTION PAPER : JULY 2019

BIOLOGY

Time: 3 Hours **Total Marks: 70**

Note:

i. All questions are compulsory.

ii. Draw neat and labelled diagrams wherever necessary.

iii. Question paper consists of **30** questions divided into **FOUR** sections namely **A, B, C** and **D.**

iv. **Section A:** Contains Q. Nos. **1** to **4** of **multiple choice** type of questions carrying **one mark** each and Q. No. **5** to **8** are **very short answer** type of questions carrying **one mark** each.

v. **Section B:** Contains Q. Nos. **9** to **18** of **short answer** type questions carrying **two marks** each. Internal choice is provided **only** to **one** question.

vi. **Section C:** Contains Q. Nos. **19** to **27** of **short answer** type of questions carrying **three marks** each. Internal choice is provided **only** to **one** question.

vii. **Section D:** Contains Q. Nos. **28** to **30** of **long answer** type of questions carrying **five marks** each. Internal choice is provided to **each** question.

viii. For each **MCQ, correct answer** must be written along with its **alphabet,**
e.g., (A) ……. / (B) ……. / (C) ……. / (D) ……. etc.

ix. In case of **MCQs**, (i.e. Q. No. 1 to 4) evaluation would be done for the **first attempt** only.

x. Answer each section on a new page.

xi. Figures to the right indicate full marks.

SECTION – A [8]

Q.1. _____ drug is used for patients who have undergone surgery. (1)

(A) Marijuana (B) Smack
(C) Morphine (D) Cannabinoids

Q.2. Name the process by which all the three types of non-genetic RNAs are produced on DNA template. (1)

(A) Translation (B) Transcription
(C) Termination (D) Replication

Q.3. Which of the animal groups show uricotelism? (1)

(A) Snake, rat, terrestrial insect
(B) Penguin, reptile, snail
(C) Land snail, bird, lizard
(D) Tadpole larva of frog, marine fish, spider

Q.4. Approximately how many eggs are produced by a normal healthy human female up to the age of 25 years if the age of menarche is 12 years _____. (1)

(A) 169 (B) 416
(C) 240 (D) 100

Q.5. Name the process in which a tumour successfully spreads to the other parts of the body, grows and destroys healthy tissues. (1)

Q.6. What is humification? (1)

Q.7. Name the sexually transmitted disease caused by *Treponema pallidum*. (1)

Q.8. Which is the process that removes introns from RNA? (1)

SECTION – B [20]

Q.9. Define fermentation. Write the names of substrate of alcoholic and lactic acid fermentation. (2)

Q.10. Complete the following chart and rewrite it: (2)

Genotype	Phenotype
I^AI^A or I^Ai	_____
_____	B
I^AI^B	
_____	O

Q.11 Your friend wants to start a business of Apiculture. Enlist the equipment he would need. (2)

Q.12 Give the role of (2)

i. Tissue plasminogen activator (TPA)

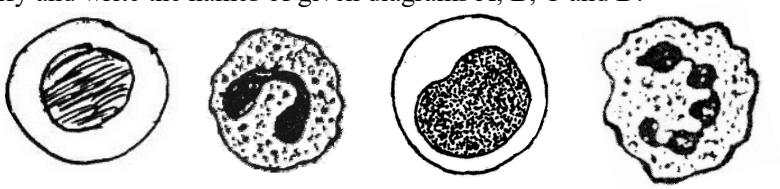
ii. Tissue growth factor-Beta (TGF-β) in Gene therapy.

Q.13 Match the following and rewrite it: (2)

	Group 'A'		Group 'B'
i.	Invertase	a.	*Trichoderma konigi*
ii.	Lipase	b.	*Saccharomyces cerevisiae*
iii.	Cellulase	c.	*Sclerotinia libertinia*
iv.	Pectinase	d.	*Rhizopus* spp.

Q.14 Sketch and label hairpin model of tRNA. (2)

Q.15 Identify and write the names of given diagrams A, B, C and D. (2)



A B C D

OR

Dilip and Mohsin measured their blood pressure. Dilip's B.P. is 120/80 mmHg and Mohsin's B.P. is 160/100 mmHg. Who is suffering from hypertension? What are its causes?

Q.16 Give the functions of Kidney. (2)

Q.17 Give the location of following valves within human heart: (2)

i. Eustachian valve ii. Thebesian valve

iii. Bicuspid valve iv. Tricuspid valve

Q.18 Define Green House Gases. Give any two examples. (2)

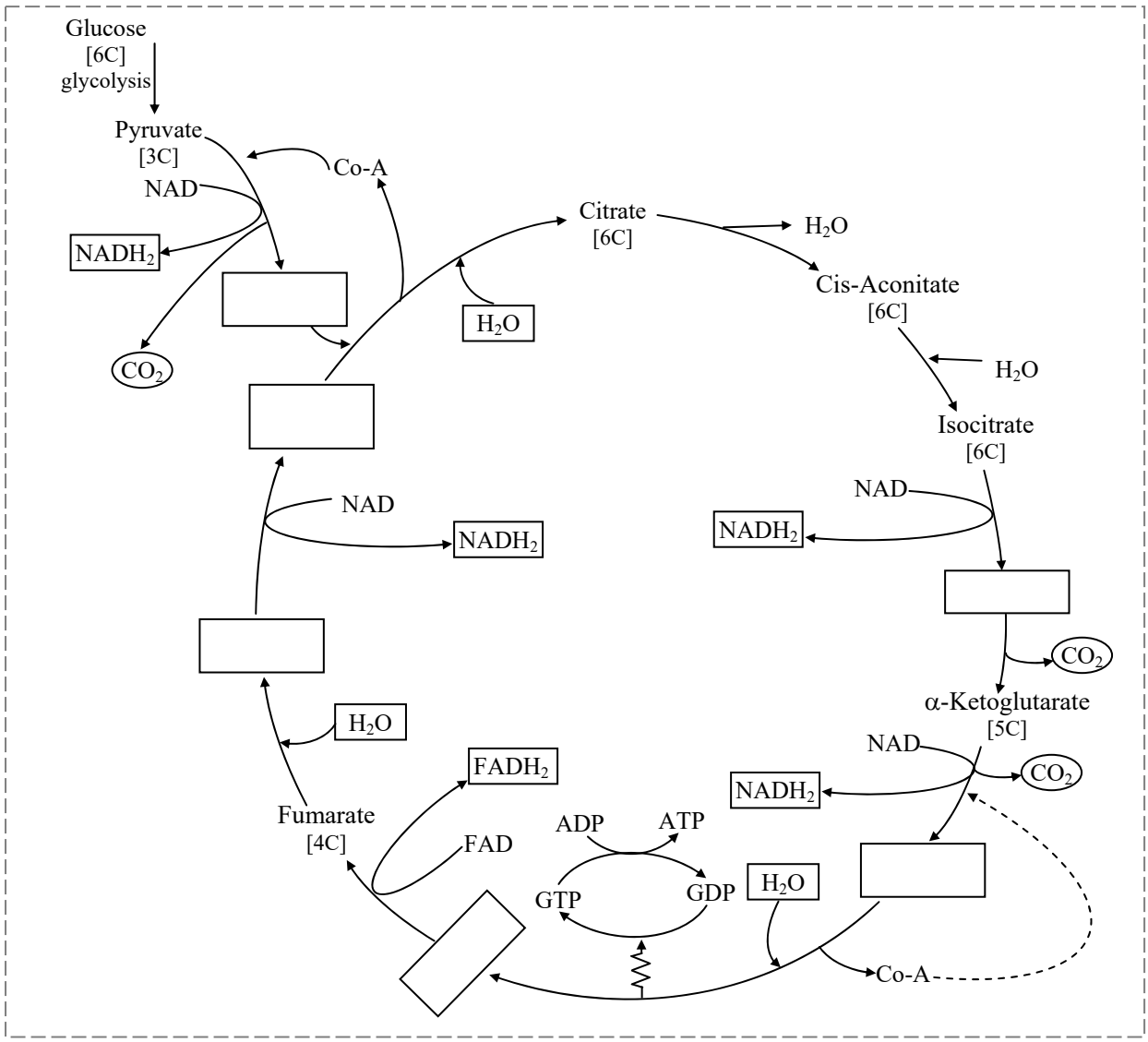
SECTION – C [27]

Q.19 Explain Homologous and Analogous organs with example. (3)

Q.20 A homozygous tall pea plant is crossed with its homozygous recessive parent. Find out the genotypic and phenotypic ratio with the help of Punnet square method. (3)

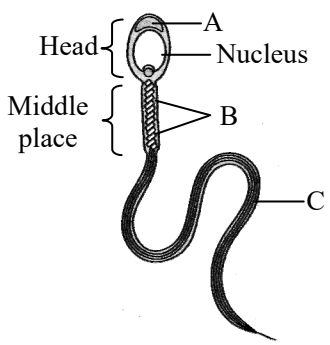
Q.21 Sketch and label the structure of Malpighian body and explain the structure of Bowman's capsule. (3)

Q.22 Write down the names of missing intermediate compounds in a sequence in the given diagrammatic representation of Kreb's cycle. (3)



Q.23 Define jumping genes. Classify them on the basis of their mechanism. (3)

Q.24 Identify A, B, C in the given diagram and give their functions: (3)



OR

Explain various mechanical methods of birth control.

Q.25 Identify disorders developed in the given genotypes and give two symptoms of each: (3)

i. 44 + XO

ii. 44 + XXY

Q.26 Name the interaction in: (3)

i. Lichen
ii. Sucker fish and shark
iii. A protozoan living in the digestive tract of a flea living on a dog.

Q.27 Given an account of various steps involved in tissue culture. (3)

SECTION – D [15]

Q.28 Give the diagrammatic representation of HSK-pathway and answer the following questions: (5)

i. Why is photorespiration avoided in C_4 pathways?
ii. Give any two examples of C_4 plants.
iii. Name the CO_2 acceptor in mesophyll cells during HSK pathway.

OR

Identify and explain with the help of diagrammatic representation, type of photophosphorylation in which P_{700} (PS II) and P_{680} (PS I) both are involved.

Q.29 Give reasons: (5)

i. Pituitary gland was formerly called as 'master endocrine gland'.
ii. Oxytocin is 'birth hormone'.
iii. People living in hilly region are advised to use iodised salt.
iv. Old age persons show weakened immune response.
v. Pancreas is a dual gland.

OR

Describe functional areas of cerebrum with the help of neat and labelled diagram.

Q.30 Define pollination. Explain different types of self and cross pollination with suitable examples. (5)

OR

Sketch and label the V.S. of anatropous ovule and answer the following questions:

i. How many mitotic divisions are required to produce embryo sac?
ii. Which part of ovule is converted into seed coat?
iii. Which part provides the passage for entry of pollen tube during fertilization?