

DAY — **10**

SEAT NUMBER

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2019 III 06

1100

J - 93**(E)****BIOLOGY (56)**

Time : 3 Hrs.

(7 Pages)

Max. 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. No. 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. No. 9 to 18 of **short answer** type of questions carrying **two marks** each. Internal choice is provided **only to one** question.
 - (vi) **Section C** contains Q. No. 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. No. 28 to 30 of **long answer** type of questions carrying **five marks** each. Internal choice is provided to **each** question.

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- (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) Start each section on a new page.
- (xi) Figures to the right indicate full marks.

SECTION – A

- Q. 1.** As the base sequence present on one strand of DNA decides the base sequence of other strand, this strand is considered as _____. [8] (1)
- (a) Descending strand
 - (b) Leading strand
 - (c) Lagging strand
 - (d) Complimentary strand
- Q. 2.** _____ shows haplo-diploid type of sex-determination. (1)
- (a) Pigeon
 - (b) Honey bee
 - (c) Parrot
 - (d) Snake
- Q. 3.** Membrane bound receptors and hormones produce second messengers like _____. (1)
- (a) Renin
 - (b) IP_3
 - (c) ANF
 - (d) GHRF

- Q. 4. During double fertilization second male gamete fuses with _____ (1)
- (a) antipodal cell
(b) egg cell
(c) secondary nucleus
(d) synergids
- Q. 5. What is Sinus arrhythmias? (1)
- Q. 6. By which process ammonia is converted into urea in liver? (1)
- Q. 7. Give the role of Plasmids in bacterial cell. (1)
- Q. 8. A person is showing symptoms like increased BMR, heart rate, pulse rate, blood pressure and deposition of fats in eye sockets. Name the disease he is suffering from. (1)

SECTION – B

- Q. 9. Define apiculture. Name the products obtained from it. (2) [20]
- Q. 10. Define biofertilizers. Give two types of fungal biofertilizers. (2)
- Q. 11. Give the types of blood proteins and human hormones produced by recombinant DNA-technique. (2)
- Q. 12. Write any two scientific and commercial values of transgenic animals in favour of human being. (2)

- Q. 13.** Define 'Respiratory Quotient' (RQ) and calculate the Respiratory Quotient for Carbohydrate. (2)
- Q. 14.** Light and dark reactions are interdependant – Explain. (2)
- Q. 15.** Classify the chromosomes on the basis of position of centromere. (2)
- Q. 16.** Sketch and label structure of male gametophyte in angiosperm. What is Siphonogamy? (2)
- Q. 17.** Match the following and rewrite : (2)

Group 'A'	Group 'B'
(a) Diethyle Carbamacine	(1) AIDS
(b) Widal test	(2) Pneumonia
(c) Albendazole	(3) Filariasis
(d) HAART	(4) Typhoid
	(5) Ascariasis

- Q. 18.** Complete the following chart and rewrite : (2)

Sr. No.	Agencies	Type of Pollination
1.	Water	
2.		Entomophily
3.	Bat	
4.		Ornithophily

OR

- Q. 18.** Explain outbreeding devices in angiospermic plants.

SECTION – C

- Q. 19. What is Biofortification? Explain selective breeding with suitable example. [27]
(3)
- Q. 20. In the light of Griffith's experiment, explain the action of two strains of *Diplococcus pneumoniae* and give his conclusion. (3)
- Q. 21. Give scientific reasons : (3)
- (A) The pyramid of energy is always upright.
 - (B) In an ecosystem the energy flow is always unidirectional.
 - (C) Ozone present in the stratosphere is called as "good ozone".
- Q. 22. Define 'reproductive isolation' and explain two types of reproductive isolation. (3)
- Q. 23. Name the connecting link between glycolysis and TCA cycle and explain it. (3)
- Q. 24. Explain internal structure of kidney with the help of suitable diagram. (3)
- Q. 25. Explain the mechanism of reflex action with the help of a suitable diagram. (3)
- Q. 26. Define pollution. "Industries are pouring poison in water" – Explain. (3)

- Q. 27. With the help of a suitable diagram, describe Ultra structure of the cell organelle, which is essential for photosynthesis. (3)

OR

- Q. 27. During photosynthesis " O_2 is evolved from water molecule and not from CO_2 ". Give the experimental proof given by Robert Hill.

SECTION – D

- Q. 28. Explain with the help of a suitable diagram conducting system of human heart. [15] (5)

OR

- Q. 28. Give reasons :

- (A) Lymphatic vessels are milky in appearance.
- (B) Monocytes are called scavengers.
- (C) The wall of left ventricle is thicker than right ventricle.
- (D) Valves are present in the veins.
- (E) Pulmonary veins carry oxygenated blood.

- Q. 29. Which phenomenon gives 2 : 1 ratio instead of 3 : 1 ratio? Describe with graphical representation. (5)

OR

- Q. 29. A pea plant homozygous for yellow round seed is crossed with its recessive parents. Calculate the phenotypic and genotypic ratio with the help of checker board.

- Q. 30. After puberty human female shows cyclic changes in her reproductive system. Explain structural and hormonal changes in the uterus. (5)

OR

- Q. 30. Give reasons :
- (A) Scrotal sac serves as thermoregulator.
 - (B) Corpus luteum gets converted into corpus albicans in absence of fertilization.
 - (C) Missing of menses is the first indication of pregnancy.
 - (D) Surgical sterilization is a permanent method of birth control.
 - (E) Human egg is microlecithal.



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