

Time : 1 hrs.

**Answers & Solutions**  
*for*  
**GUJCET-2018**  
**(Biology)**

M.M. : 40

**Important Instructions:**

1. The Biology test consists of 40 questions. Each question carries 1 mark. For each correct response, the candidate will get 1 mark. For each incorrect response, mark will be deducted. The maximum marks are 40.
2. This Test is of 1 hour duration
3. Use Black Ball Point Pen only for writing particulars on OMR Answer Sheet and marking answers by darkening the circle "O".
4. Rough work is to be done on the space provided for this purpose in the Test Booklet only.
5. On completion of the test, the candidate must handover the Answer Sheet to the Invigilator in the Room / Hall. The candidates are allowed to take away this Test Booklet with them.
6. The Set No. for this Booklet is . Mark sure that the Set No. printed on the Answer sheet is the same as that on this booklet. In case of discrepancy, the candidate should immediately report the matter to the Invigilator for replacement of both the Test Booklet and the Answer Sheet.
7. The candidate should ensure that the Answer Sheet is not folded. Do not make any stray marks on the Answer Sheet.
8. Do not write your Seat No. anywhere else, except in the specified space in the Test Booklet/Answer Sheet.
9. Use of White fluid for correction is not permissible on the Answer sheet.
10. Each candidate must show on demand his / her Admission Card to the Invigilator.
11. No candidate, without special permission of the Superintendent or Invigilator, should leave his/her seat.
12. Use of Manual Calculator is permissible.
13. The candidate Should not leave the Examination Hall handing over their Answer Sheet to the Invigilator on duty and must sign the Attendance Sheet (Patrak-01). Cases where a candidate has not signed the Attendance Sheet (Patrak-01) will be deemed not to have handed over the Answer Sheet and Will be dealt with as an unfair means case.
14. The candidates are governed by all Rules and Regulations of the Board with regard to their conduct in the Examination hall. All cases of unfair means will be dealt with as per Rules and Regulations of the Board.
15. No Part of the Test Booklet and Answer Sheet shall be detached under any circumstances.
16. The candidates will write the Correct Test Booklet Set No. as given in the Test Booklet / Answer Sheet in the Attendance Sheet. (Patrak - 01).

## PART-A : BIOLOGY

1. When the MTP act came into force in India?  
 (A) 1973 (B) 1972  
 (C) 1971 (D) 1970

**Answer (B)**

2. Why transgenic mice are being developed?  
 (A) To stop the harmful activities in house  
 (B) For the use in Agriculture  
 (C) Testing the safety of vaccines  
 (D) In the form of bioinsecticide

**Answer (C)**

3. For DNA fingerprinting, short repetitive nucleotide sequences are known as?  
 (A) VNTR (B) DNA probes  
 (C) Introns (D) DNA primers

**Answer (A)**

4. In operon the segments of DNA which carry codes for the synthesis of proteins are known as  
 (A) structural gene (B) Regulator gene  
 (C) Repressor gene (D) Promoter gene

**Answer (A)**

5. The  $amp^R$  gene has \_\_\_\_\_ recognition site.  
 (A) Pst-I (B) Pvu-II  
 (C) Hind-III (D) Bam H-I

**Answer (A)**

6. In Africa, two distinct types of Rhinoceros are found. One is grazing which lives in open land and second is a browsing type which lives in wooded areas. It is which type of adaptive radiation?  
 (A) Local adaptive branching  
 (B) Contemporaneous radiation  
 (C) Continental adaptive radiation  
 (D) Wide adaptive branching

**Answer (A)**

7. Which gland is associated with regulation of body rhythm and in maintaining sleep-wake cycle?  
 (A) Pituitary gland (B) Parathyroid gland  
 (C) Pineal gland (D) Adrenal gland

**Answer (C)**

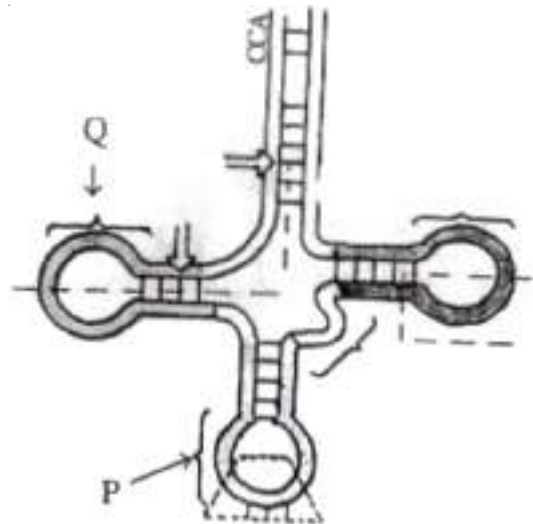
8. Which part of the brain receives impulses from eyes and muscles of head?  
 (A) Superior colliculi (B) Inferior colliculi  
 (C) Pineal body (D) All of them

**Answer (A)**

9. under normal conditions the wall of RBC acts as permeable membrane to which ions?  
 (A)  $Na^+$ ,  $K^+$  (B)  $Na^+$ ,  $HCO_3^-$   
 (C)  $Cl^-$ ,  $HCO_3^-$  (D)  $K^+$ ,  $Cl^-$

**Answer (C)**

10. Identify P and Q in the following figure?



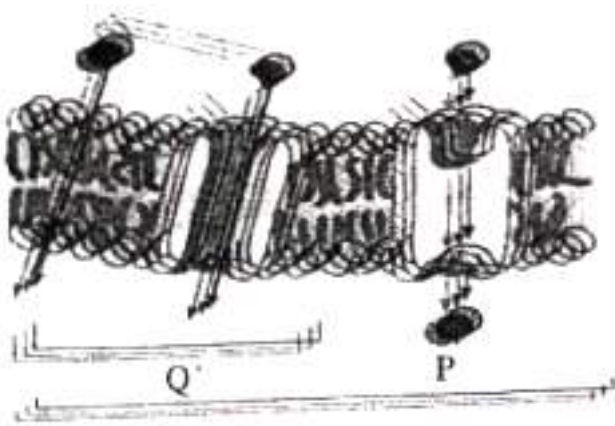
- (A) P - Anticodon;  
 Q - D - Loop  
 (B) P - D - Loop;  
 Q - T  $\psi$  C Loop  
 (C) P - Anticodon Loop;  
 Q - D - Loop  
 (D) P - Site of amino acid attachment  
 Q - T  $\psi$  C Loop

**Answer (C)**

11. How much water is absorbed in 15 hours by a mustard plant having 2 kg wt.  
 (A) 2 Kg  
 (B) 6 Kg  
 (C) 4 Kg  
 (D) 12 Kg

**Answer (B)**

12. Identify P and Q in the given diagram



- (A) P = Facilitated diffusion  
Q = Simple diffusion
- (B) P = Facilitated diffusion  
Q = Active transport
- (C) P = Simple diffusion  
Q = Passive transport
- (D) P = Simple diffusion  
Q = Active transport

**Answer (A)**

13. What happens when gall bladder is removed in humans?

- (A) Lipid metabolism decreases
- (B) Jaundice
- (C) Protein metabolism decreases
- (D) Carbohydrate metabolism decreases

**Answer (A)**

14. Match the following and choose the correct option.

| Column I           | Column II                                         |
|--------------------|---------------------------------------------------|
| P) SA node         | i) lower left corner of the right atrium          |
| Q) Purkinje fibres | ii) from the AV node, a tract of conducting fiber |
| R) AV node         | iii) right upper corner of the right atrium       |
| S) Bundle of His   | iv) branches that emerge from the bundle of His   |

- (A) (P - iii) (Q - i) (R - iv) (S - ii)
- (B) (P - iii) (Q - iv) (R - i) (S - ii)
- (C) (P - iii) (Q - iv) (R - ii) (S - i)
- (D) (P - iv) (Q - ii) (R - iii) (S - i)

**Answer (B)**

15. The diversity which is richness of different species in a range of habitats within a geological area is known as?

- (A)  $\alpha$  diversity
- (B) delta diversity
- (C) ecosystem diversity
- (D)  $\gamma$ (gamma) diversity

**Answer (D)**

16. "India is a country of youngsters" on this basis, if age pyramid is made. What type of pyramid it will be?

- (A) Triangular shape
- (B) Bell shape
- (C) Urn shape
- (D) Spindle shape

**Answer (A)**

17. In \_\_\_\_\_ the filtrate and plasma get isotonic.

- (A) Distal convoluted tubule
- (B) Descending limb of the loop of Henle
- (C) Proximal convoluted tubule
- (D) Ascending limb of the loop of Henle

**Answer (C)**

18. How does urea enter descending capillaries?

- (A) Diffusion
- (B) Active transport
- (C) Osmosis
- (D) Diffusion and Osmosis

**Answer (A)**

19. Which company is providing CNG in Surat?

- (A) GAIL
- (B) ADANI
- (C) GGCL
- (D) RELIANCE

**Answer (C)**

20. In which stage in the process of decomposition do bacteria and fungi become active?

- (A) Fragmentation
- (B) Accumulation
- (C) Leaching
- (D) Catabolism

**Answer (D)**

21. Statement A: All the locomotions are movements.

Statement B: All the movements are not locomotions

- (A) Statement A and B both are correct
- (B) Statement A is true but B is false
- (C) Statement A and B both are false
- (D) Statement A is false but B is false

**Answer (A)**

22. The vertebral formula of human is  
 (A)  $T_{12}, C_7, L_5, S_8$  (B)  $C_7, T_{12}, L_5, S_5$   
 (C)  $C_7, L_8, T_{12}, S_5$  (D)  $C_7, S_5, T_{22}, L_5$

**Answer (B)**

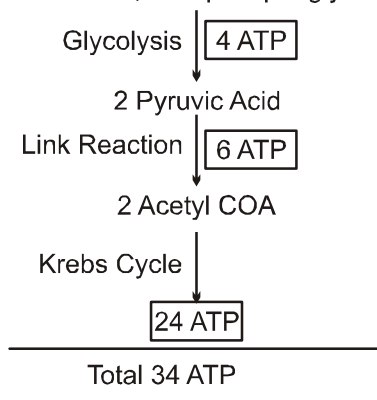
23. How is green house gas raise the temperature of Earth?  
 (A) It absorbs the long wave length infrared rays and reflect them back towards the earth  
 (B) It absorbs sunrays and decreases the temperature of earth  
 (C) It absorbs sun rays and increases the temperature of earth  
 (D) It absorb shorter wave length of infrared wave

**Answer (A)**

24. How many ATP are synthesized in Eukaryotic cell during aerobic repiration of 1, 3 biphosphoglyceric acid?  
 (A) 34 ATP (B) 80 ATP  
 (C) 38 ATP (D) 68 ATP

**Answer (A)**

**Sol.** 2 molecules of 1, 3 bisphosphoglyceric acid



**Note:** Number of 1, 3 bisphosphoglyceric acid is not given in paper. So glucose is taken as reference

25. If Respiratory substrate like sucrose dipeptide protein and lipid are present in living cell, which substrate is utilised first?  
 (A) Sucrose (B) Lipid  
 (C) Protein (D) Dipeptide

**Answer (A)**

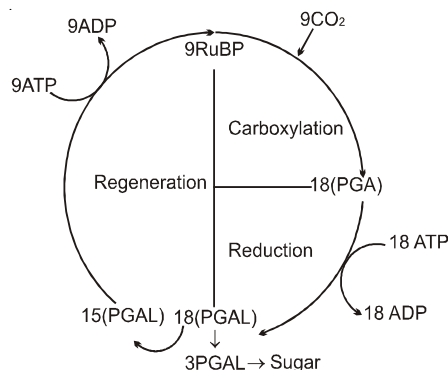
**Sol.** Carbohydrate is most preferred respiratory substrate.

26. In the presence of bright sunlight small bubbles are formed around the green parts of the plant'. Who showed this?  
 (A) Joseph Priestley (B) Robert Hill  
 (C) Jan Ingenhousz (D) Julius Von Sachs

**Answer (C)**

27. If 18 PGAL are formed during dark reaction, how many Calvin cycles and ATPs are required respectively?  
 (A) 9 Calvin cycle, 24 ATP  
 (B) 6 Calvin cycle, 18 ATP  
 (C) 9 Calvin cycle, 27 ATP  
 (D) 6 Calvin cycle, 36 ATP

**Answer (C)**

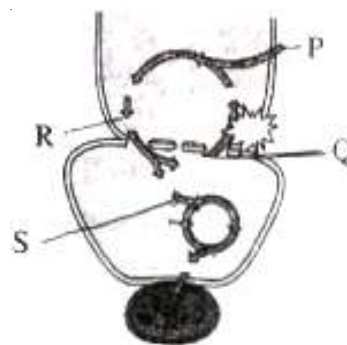


**Sol.**

28. What is the time for P wave in ECG?  
 (A) 0.10 sec. (B) 0.40 sec.  
 (C) 0.30 sec. (D) 0.80 sec

**Answer (A)**

29. At which site  $CO_2$  enters in the given diagram labelled with P, Q, R, S? Choose the correct option.



- (A) P, S (B) R, S  
 (C) P, R (D) Q, S

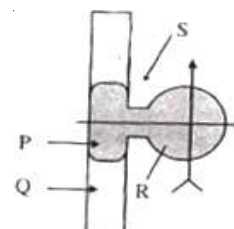
**Answer (A)**

30. Identify the part which is made up of peripheral membrane protein complex in the given figure?

- (A) P  
 (B) R  
 (C) Q  
 (D) S

**Answer (B)**

**Sol.** Peripheral is Extrinsic protein.



31. Which is correct for VC?

- (A) IC + ERV
- (B) TV + ERV
- (C) RV + IRV + ERV
- (D) VC + RV + TV

**Answer (A)**

32. Morphologically and Physiologically similar and usually motile and flagellated gametes are known as \_\_\_\_\_ and its correct example?

- (A) Isogamete, Fucus
- (B) Isogamete, Cladophora
- (C) Anisogamete, Spirogyra
- (D) Anisogamete, Human gametes

**Answer (B)**

33. Which hormone stimulates the development and differentiation of T-lymphocytes?

- (A) Parathormone
- (B) Thyrocalcitonin
- (C) Thyroxine
- (D) Thymosin

**Answer (D)**

34. Where the pollengrains are develop in anther during microsporogenesis?

- (A) Epidermis
- (B) Sporogenous tissue
- (C) Endothecium
- (D) Tapetum

**Answer (B)**

35. Statement A: Due to sudden influx of a large amount of  $\text{Na}^+$  towards inside, the plasma membrane becomes positively charged on its inner side

Statement R: It is said to be depolarized

- (A) A and R both are true
- (B) A is true, R is false
- (C) A and R both are false
- (D) A is false, R is true

**Answer (A)**

36. America obtained a patent for germplasm of Indian Basmati rice. This process is known by which name?

- (A) Biopatent
- (B) Bioinsecticide
- (C) Biowar
- (D) Biopiracy

**Answer (D)**

37. By Which process uncertainty of flowering due to photoperiodism can be avoided?

- (A) Phototropism
- (B) Senescence
- (C) Vernalization
- (D) Abscissin

**Answer (C)**

38. Klinefelter's syndrome

- (A) Trisomy of autosomes
- (B) Monosomy of autosome
- (C) Trisomy of sex chromosomes
- (D) Monosomy of sex chromosome

**Answer (C)**

**Sol.** Klinefelter's syndrome  $-2A+XXY$

Trisomy is  $2n + 1$

39. What is the ratio for test cross in dihybrid experiment of Mendel?

- (A) 9 : 3 : 3 : 1
- (B) 1 : 1 : 1 : 1
- (C) 7 : 1 : 1 : 7
- (D) 11 : 1 : 1 : 3

**Answer (B)**

**Sol.**  $AaBb \times aabb$  Test cross

|    |                    |
|----|--------------------|
|    | $\downarrow$<br>ab |
| AB | AaBb               |
| Ab | Aabb               |
| aB | aaBb               |
| ab | aabb               |

Ratio = 1 : 1 : 1 : 1

40. Which one forms axial filament of the human sperm?

- (A) Mitochondria
- (B) Proximal centriole
- (C) Distal centriole
- (D) Golgi body

**Answer (C)**