

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)

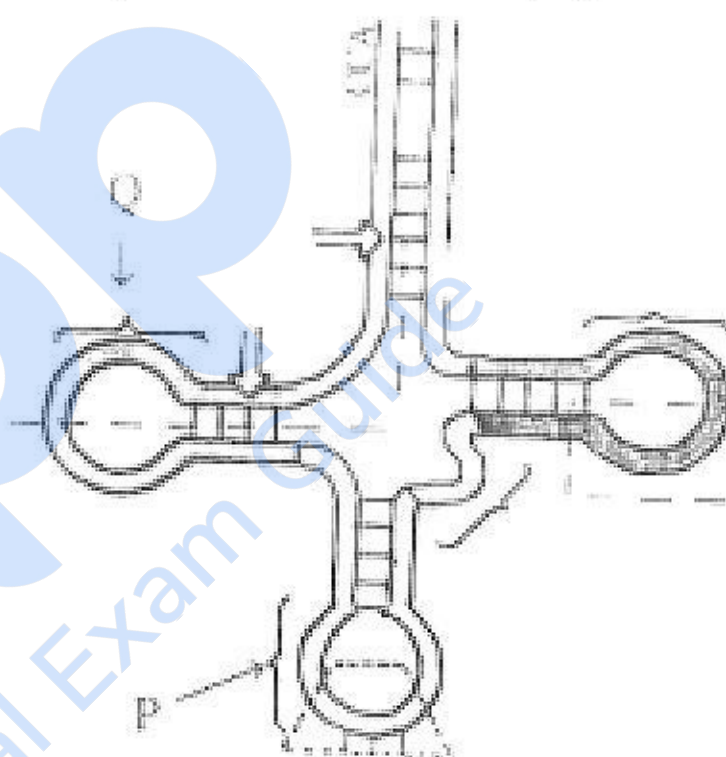
8. Which part of the brain receives impulses from eyes and muscles of head?
 (A) Superior colliculi (B) Inferior colliculi
 (C) Pineal body (D) All of them

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?



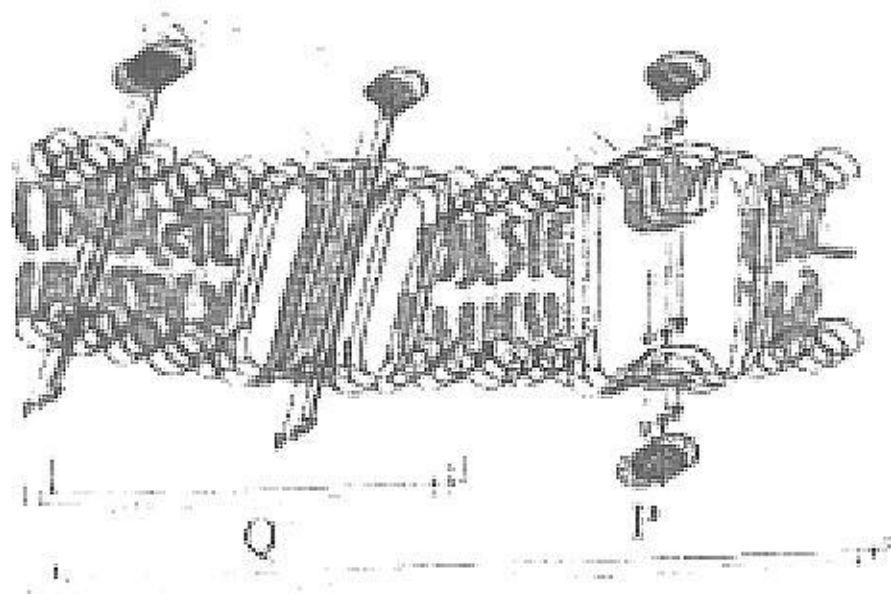
- (A) P- Anticodon;
 Q - D - Loop
 (B) P - D - Loop;
 Q - T ψ C Loop
 (C) P - Anticodon Loop;
 Q - D - Loop
 (D) P - Site of amino acid attachment
 Q - T ψ C Loop

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) α diversity (B) delta diversity
- (C) ecosystem diversity (D) γ (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 the urea enter in 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 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

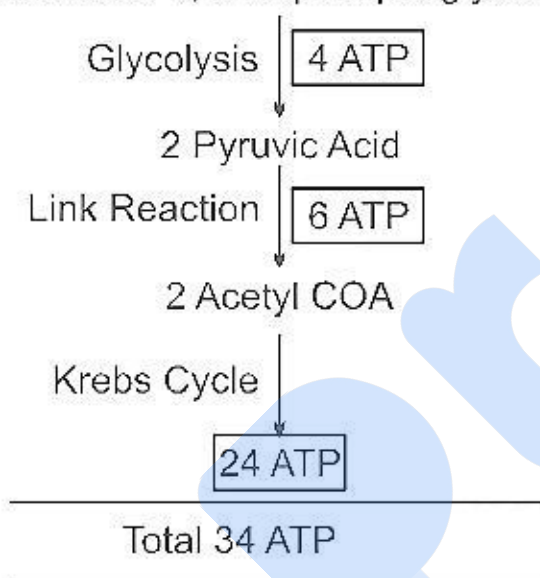
Answer (A)

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?

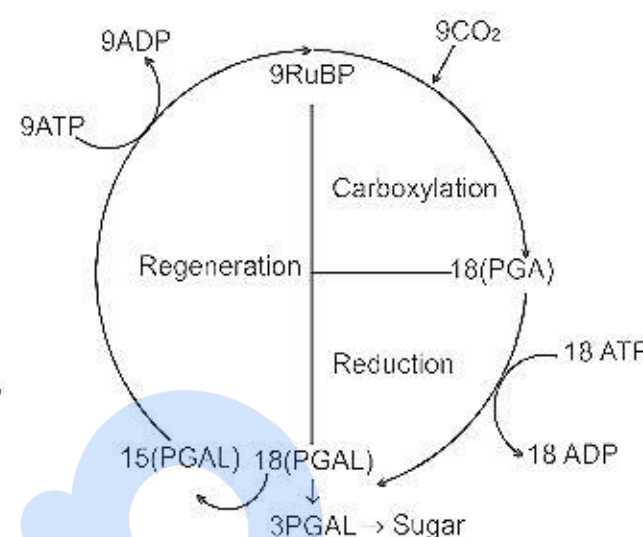
- (A) Joseph Priestley (B) Robert Hill
 (C) Jan Ingenhousz (D) Julius Von Sachs

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)



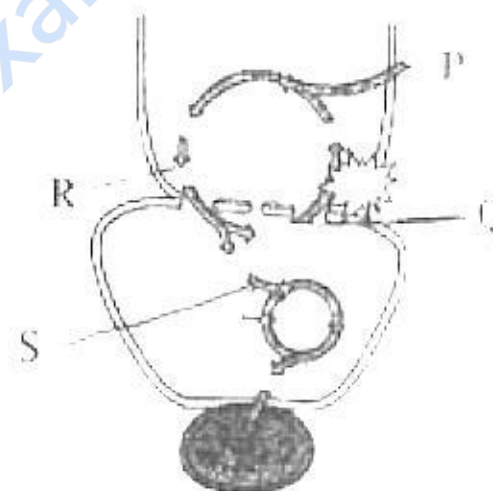
Sol.

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

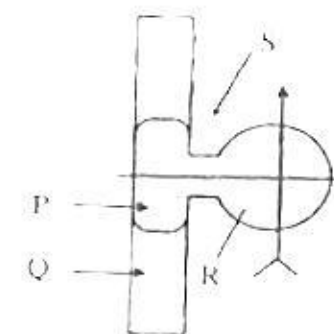
Answer (A)

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 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

	$\downarrow$ 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)