

**SAMPLE MOCK TEST ON IIT-JAM / GATE / JGEEBILS**

**Full Marks: 10**

**Time: 30 minutes**

1. The area of a pond system where R is greater than P is called
  - a. Limnetic zone
  - b. Profundal zone
  - c. Littoral zone
  - d. Thermocline zone
2. Anaphylactic shock is predominantly manifested by \_\_\_\_\_
  - a. T cell Receptor
  - b. B cell Receptor
  - c. Fc Receptor
  - d. Toll like Receptor
3. Which one of the below is not a non-random factor underlying micro evolution?
  - a. Genetic flow
  - b. Genetic drift
  - c. Genetic mutation
  - d. Genetic mosaicism
4. Proenzyme pepsinogen is secreted from 'P' of gastric mucosa and converted into active enzyme pepsin on exposure to 'Q' secreted from 'R'. Choose the CORRECT combination of P, Q and R.
  - a. P - chief cells Q - hydrochloric acid R - oxyntic cells
  - b. P - parietal cells Q - enterokinase R - chief cells
  - c. P - oxyntic cells Q - hydrochloric acid R - parietal cells
  - d. P - peptic cells Q - gastrin R - oxyntic cells
5. When bacteria are grown in a media containing high concentration of lactose, with miniscule glucose, the operon is regulated by
  - a. Binding of repressor in the operator site and activator in the CAP site.
  - b. Dissociation of bound repressor from the operator site and binding of activator in the CAP site.
  - c. Dissociation of bound lac repressor only from the operator site without involvement of the activator.
  - d. Dissociation of both repressor and activator from operator site from CAP site respectively.
6. Which of the following statement is INCORRECT for G protein-coupled receptor (GPCR) mediated signaling?
  - a. G-proteins are molecular switches that have inherent GTPase property.
  - b. In the absence of GPCR interacting ligand,  $\alpha$  subunit of G protein is bound to GDP and complexed with  $\beta\gamma$  subunits.
  - c. Hydrolysis of alpha GTP is not stimulated by GAP proteins.
  - d. In the presence of the ligand, the Receptor acts as GEF and results is dissociation of alpha domain.
7. In a genetic cross between two true breeding plants bearing red flowers and yellow seeds, and white flower and green seeds respectively, the obtained  $F_1$  offsprings were selfed and the resultant phenotypic distribution was obtained in the  $F_2$  progeny:
  - i) 783 plants with red flowers and yellow seeds
  - ii) 47 plants with red flowers and green seeds
  - iii) 43 plants with white flowers and yellow seeds
  - iv) 779 plants with white flowers and green seedsWhich one of the following interpretations explains the above phenotypic distribution?
  - a. A single polymorphic loci control both flower and seed colours.
  - b. Two different loci exhibit complex interaction and control flower and seed colours.
  - c. Flower colour in this plant species is a polygenic trait.
  - d. Two distinct syntenic genes are responsible for flower and seed colors.
8. What is the significance of the isomerization of glucose 6-phosphate to fructose 6-phosphate for the progression of glycolysis?
  - a. As functional groups, ketones are more reactive than aldehydes
  - b. Cleavage of glucose 1,6-bisphosphate will not yield dihydroxy acetone phosphate and glyceraldehyde 3-phosphate
  - c. The carbonyl group at carbon-2 (C-2) in fructose facilitates the cleavage of the bond between C-3 and C-4
  - d. Phosphorylation of glucose 6-phosphate to glucose 1,6-bisphosphate is irreversible
9. Match the diseases in Column I with their causative organisms in Column II:

(P) Syphilis	(1) Shigella dysenteriae
(Q) Bacillary dysentery	(2) Bordetella pertussis
(R) Gas gangrene	(3) Treponema pallidum
(S) Whooping cough	(4) Clostridium perfringens

  - a. P-2, Q-1, R-4, S-3
  - b. P-3, Q-4, R-2, S-1
  - c. P-2, Q-3, R-4, S-1
  - d. P-3, Q-1, R-4, S-2
10. Apical complex is found in:
  - a. Paramecium caudatum
  - b. Toxoplasma gondii
  - c. Leishmania donovani
  - d. Trypanosoma gambiense

Answer Keys:

1.	2.	3.	4.	5.
6.	7.	8.	9.	10.