**Question Bank 3**

**Course- B.Sc. Biotechnology (H) 2nd Semester**

**Subject: Cell Biology; Topic: Protein Targeting**

1. **Multiple Choice Questions:**
2. Protein kinases and phosphatases act by altering \_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the signaling proteins.  
   a) basicity  
   b) conformation  
   c) acidity  
   d) size
3. To which of the following residues of the protein, the protein kinases do not add phosphate groups?  
   a) serine  
   b) cytosine  
   c) threonine  
   d) tyrosine
4. Steroids are derived from \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
   a) estrogen  
   b) cholesterol  
   c) proteins  
   d) carbohydrates
5. Which of the following has an antagonistic action to adenylate cyclase?
6. Cyclic adenosine monophosphate (cAMP)
7. Protein kinase
8. The active GTP-á subunit of a G protein
9. Phosphodiesterase
10. The target cells of a lipid soluble hormone such as cortisol, are able to respond to it because of which of the following?
11. Their genome includes the appropriate transcriptional response elements.
12. They have membrane bound cell surface receptors.
13. Only target cells express appropriate cytosolic receptors.
14. The hormone-receptor complex stimulates the phosphorylation/dephosphorylation of subsequent proteins in the signalling pathway.
15. Which of the following is not a type of signaling molecule?
16. Testosterone
17. Insulin
18. Thyroxin
19. Adenylate cyclase
20. Which of the following statements about G proteins is false?
21. They are involved in signal cascades
22. They bind to and are regulated by guanine nucleotides
23. They become activated when bound to GDP
24. They must be active before the cell can make needed cAMP
25. cAMP and cGMP are derived from
26. ATP and GTP by the actions of adenylate cyclase and guanylate cyclase respectively
27. GTP and ATP by the actions of adenylate cyclase and guanylate cyclase respectively
28. ATP and GTP by the actions of guanylate cyclase and adenylate cyclase respectively
29. None of the above
30. In the signal transduction mechanism known as protein phosphorylation
31. the signaling molecule binds to a surface receptor
32. receptor kinases play a key role in triggering the signal cascade
33. phosphorylated proteins act with enzymes to trigger the signal cascade
34. All of the above
35. The signaling molecules called steroid hormonesCOP-coated Vesicle
36. are made in one location of the body but have their effects some distance away
37. are hydrophilic and so cannot penetrate the plasma membrane
38. bind to cell surface receptors to trigger chemical cascades
39. never enter the blood of humans
40. **Short Questions**
41. Discuss the structure of steroid hormone receptor?
42. Differntiate between Gsα and Giα?
43. Discuss the functions of steroidal hormones?
44. Discuss the classes of steroidal hormones?
45. What are phytohormones?
46. **Long Questions**
47. Discuss signal amplification?
48. Discuss the factors inhibiting the formation of cAMP.
49. Discuss the molecular structure of steroidal hormones.
50. Discuss the signaling pathway of steroidal hormones.
51. Discuss the types and function of phytohormones.