Paper Code : 3625

B.Sc. Semester- 3
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Biotechnology
CC-304--Cellular metabolism I

કુલ સમય :– ૬૦ મીનીટ કુલ પ્રશ્નો : ૫૦ વિદ્યાર્થીએ ટીક કરવાના પ્રશ્નો : ૩૫

નોંધ : વિદ્યાર્થીએ માત્ર ૩૫ પ્રશ્નો જ ટીક કરવાના રહેશે. જો વધારે ટીક કરેલ હશે તો પ્રથમ ૩૫ પ્રશ્નો જ ગણતરીમાં લેવામાં આવશે.

1. ----------ATP are produced by complete oxidation of 3 glucose molecules
   A. 38 B. 36 C. 6 D 114
2. ----------water molecules are released by one glycolytic pathway
   A. 2 B. 0 C 1 D. 3
3. How many polypeptide chains are present in human adult hemoglobin?
   A. 1 B. 2 C. 3 D.4
4. Identify oxygen independent phase of respiration
   A. ETS B. EMP C. FERMENTATATION D. All
5. For spontaneous reaction free energy change should be
   A. Negative B. Positive C. Zero D. None
6. Identify correct equation.
   A. Holloenzyme= Appoenzyme + Cofactor B.Appoprotein= Holloenzyme + cofactor
   C. Appoprotein+ Holloenzyme D.Appoenzyme+ Enzyme +coenzyme
7. ATP is
   A. Purine containing nucleotide B ribonucleotide C.nucleoside D A and B
8. If a enthalpy change in negative than free energy change is
   A. Always positve B. zero C. negative D. there is no relation
9. Feedback inhibitor of hexokinase is
   A. glucose B. Epinephrine C. Glucose 6 phosphate D. A and B both
10. ----------is universal energy curencey
    A. ATP B.GTP C. TTP D. CTP
11. ----------is example of quaternary structure of protein?
    A. Mycoglobin B. Haemoglobin. C. Actin. D.All
12. Quantitative measure of randomness is
    A. Entropy B. Enthalpy C. Free energy D. Internal energy.
13. What is location of TCA cycle in eukaryotic cell?
    A. Cytoplasm B. Mitochondrial matrix C. Cytoplasm D. Cell membrane
14. 1 NADH can be useful in production of ----------ATP
    A. 2 B.3 C.5 D.None
15. Enzyme is mainly made up of
    A. Protein B.carbohydrate C.lipid D.None of above
16. Heat content of system is termed as
    A. Entropy B.Enthalpy C.Free energy D.All18/
17. if a Keq(equilibrium constant) is zero than free energy change is
    A. Zero B.positive C.negative D.both A and B
18. in all spontaneous reaction entropy of universe increases this is -------law of thermodynamics
    A. First B.second C.third D.zero
19. ribonucleotide is component of ----------
    A. ATP B.NAD C.FAD D.All
20. Anabolism is
    A. Synthesis reaction B.Degradation reaction C.Amphibolic reaction D.All
21. Which of the following is central metabolic pathway
    A. TCA B. GlycolysisC.HMP D. all
22. If a keq of reaction is zero than free energy change should be
    A. Zero B.Positive C.Negative D.All
23. ----------is net gain of ATP from gylycolysis
    A. 4 B.2 C.8 D.38
24. How many ATP are /is synthesized by substrate level phosphorylation in single TA cycle?
    A. 1 B.4 C.30 D.2
25. Which of the following is activator of aerobic respiration?
    A. ATP B.AMP C.Heat D.NADH

26.In a quaternary structure of protein number of polypeptides are----------

A. Always one B.More than one C.One or two D.Always four.

27.----------this is example of tertiary structure of protein

A. Myoglobin B.Haemoglobin C.Immunoglobin D.All

28.Enzyme activity is affected by

A. Ph b.substrate concenteation c.temperature d.all

29.Km is equal to substrate concentration when Vo is

A. Vm b.Vm/2 c.Vm/4 d.Vm/8

30.Bell shape curve is obtain during study of ----------on enzyme activity

A. pH b.temperature c.substrate concentration. D. A and B both

31.Identify coenzyme of glyceradehyde 3 phosphate dehydrogenase enzyme

A. NAD b.NADP c.ATP d.FAD

32.Allosteric enzyme gives ----------shape curve

A. Hyperbolic b.Sigmoid c.Linear d.Delta

33.Identify ribozyme

A. Hexokinase b.DNA c.23 S r RNA d.A and B both

34.Electrons should spontaneously move from molecule with ----------reduction potential to molecule with ---------- reduction potential.

A. Higher, lower b.Lower, higher c.Negative , zero d.Zero, zero

35.Redox potential is measured in

A. Volts b.kg c.cm d.all

36.NAD transfers electron in a form of

A. Hydride ions b.hydrogen c.oxygen d.All

37.Standard free energy of ATP hydrolysis is ----------kj/mol

A. 7.5 b.30.5 c.6 d.00

38.A competitive inhibitor increases ----------

A. Km b.Vm c.Km and Vm both d.None

39.Competitive inhibitor resembles ----------

A. Product b.Transition state c.Substrate d.Both A and C

40.PPP Is performed for

A. Synthesis of NADPH b.Provision of pentose sugars c.ATP synthesis d.A and B both

41.Number of product molecules produced in unit time represents----------of enzyme.

A. Km b.Turnover number c.Substrate concentration d.Inhibitor concentration.

42.FAD and FMA are

A. Same moleucles b.Different molecules but have same no of nucleotides

B. FMA has deoxyribonucleotide d.none

43.if km is equal to 5S than vo should be

A. vm/6 b.vm/5 c.vm d.None

44.Competitive inhibitor binds to ----------on enzyme

A. Active site of an enzyme b.Other than active site

c. On and around active site. D.N terminal region

45.Catalytic amino acid is found on ----------site of enzyme

A. Catalytic site b.Substrate binding site c.Any site d.A and B both

***46.*Enzyme increases the rate of reaction by lowering the activation energy.**

A. True b.False c.Both A & B d.None of the above

47.Mark the CORRECT function of enzyme, Protease?

A. Cleave phosphodiester bond b.Cleave peptide bonds

C. Remove phosphate from a substrate d.Removal of H_2O

48.Which of the following reaction is catalyzed by Lyase?

A. Breaking of bonds and adding double bonds b.Use of water to break bond

C. Formation of bonds d.Intramolecular rearrangement of bonds

49. Which of the following is produced with the combination of apoenzymeand coenzyme?

A. Holoenzyme b.Appoprotein c.Cofactor d.None of these

50.Enzyme can react with ----------

A. Any substrate b.Specific substrate c.No substrata d.Depend upon condition