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NET JRF TEST 7

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Contact Number: 9350232207, 9891602060

Test-7

Cell division, cell organelle (structure, Function), Cell Interaction, Structure of Prokaryotic and Eukaryotic cell.

- Which of the following is lipid derived secondary messenger?
 - Inositol 1,3,5 triphosphate
 - cAMP
 - DAG
 - Both b & c
- All collagen molecules are
 - Trimers
 - Primers
 - Dimers
 - Tetramers
- The pH of a lysosomal compartment is
 - 5
 - 4
 - 4.6
 - 5.6
- Carotenoids reflect _____, _____ & _____ region of the spectrum
 - yellow, violet, orange
 - yellow, orange, red
 - yellow, blue, red
 - none
- The end of prophase is marked by _____ of _____
 - Fragmentation, Chromosome
 - Fragmentation, Nuclear envelope
 - Segregation, Nucleoplasm
 - Segregation, Chromosome
- What is the molecular weight of cytoplasmic dyenin?
 - 1.5 million daltons
 - 0.5 million Daltons
 - million Daltons
 - million Daltons

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7. Oxidation of urate, glycolate & amino acids takes place in

- (a) vacuole
- (b) Mitochondria
- (c) chloroplast
- (d) peroxisome

8. Gap junctions are composed of _____

- (a) Collagen
- (b) Occludins
- (c) Claudins
- (d) Connexions

9. The rise in cyclin concentration has the following effect on Kinases.

- (a) Regulates kinases
- (b) Inhibits kinases
- (c) Activates kinases
- (d) None

10. _____ is the most abundant protein found in the human body

- (a) Collagen
- (b) Pepsin
- (c) ACTH
- (d) trypsin

11. Which of the following forms triskelions?

- (a) clathrin
- (b) cadherins
- (c) selectins
- (d) integrin

12. _____ is a type of extra cellular matrix.

- (a) cartilage
- (b) Basement membrane
- (c) Glomerulus
- (d) Bone

13. Why Photosystem-I is also called as reaction centre P700.

- (a) both
- (b) because it absorbs more strongly at 700nm of the spectrum
- (c) it reflects 700nm of light
- (d) none

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14. The counter part of TIM-TOM complex in chloroplast is called as
- (a) Tic complex
 - (b) TIM complex
 - (c) TOM complex
 - (d) Tic Toc complex
15. G-proteins are always found associated with
- (a) Nuclear membrane
 - (b) Mitochondria
 - (c) Golgi complex
 - (d) Plasma membrane
16. The _____ end of the microtubule joins the kinetochore.
- (a) Both
 - (b) Plus
 - (c) Minus
 - (d) None
17. Why leaves appear green in colour?
- (a) because they reflect green light
 - (b) because they absorb blue light
 - (c) because they absorb red light
 - (d) all
18. Fatty acid metabolism takes place in which of the following organelle?
- (a) Mitochondria
 - (b) vacuole
 - (c) Nucleus
 - (d) Chloroplast
19. A minimum of _____ photons must be absorbed in order to produce 1 molecule of oxygen during photosynthesis.
- (a) 9
 - (b) 7
 - (c) 8
 - (d) 10
20. ATP synthase is
- (a) F1
 - (b) Fo & F1

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- (c) Fo
- (d) Coupling factor 1

21. What is the function of uncoupling proteins.

- (a) Act as uncouplers
- (b) Are abundant in brown adipose tissue
- (c) makes inner membrane impermeable to H⁺ ions
- (d) All

22. Lysosomal enzymes contains _____ mannose residues as recognition signal.

- (a) Hydroxylated
- (b) Phosphorylated
- (c) Non phosphorylated
- (d) Non hydroxylated

23. Following is an insulin receptor

- (a) Protein tyrosine kinase
- (b) Protein lysine kinase
- (c) Protein lysine phosphatase
- (d) protein tyrosine phosphatase

24. What is photoinhibition?

- (a) both
- (b) damage to PSII
- (c) damage to PSI
- (d) none

25. The cancerous cells has _____ type of division

- (a) Uncontrolled
- (b) Controlled
- (c) Sequential
- (d) Metastatic

26. The full form of hsp is

- (a) Heat sensitive protein
- (b) Height shock protein
- (c) Heat shock protein
- (d) Height sensitive protein

27. Kinesin is said to be _____ end directed microtubular motor.

- (a) both

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- (b) plus
- (c) minus
- (d) none

28. Carotenoids absorb in _____ & _____ region of the spectrum

- (a) both
- (b) blue
- (c) green
- (d) none

29. Collagen is produced primarily by

- (a) Epithelial cells
- (b) Fibroblasts
- (c) Smooth muscle cells
- (d) all

30. Arrangement of chromosomes occurs in _____ during metaphase.

- (a) Metaphasic plate
- (b) Cell plate
- (c) Tissue plate
- (d) poles

31. The impulse generated at SA node in heart spreads from one cardiac muscle to another via

- (a) Gap junction
- (b) Basement membrane
- (c) Tight junction
- (d) Desmosome

32. Mitochondrial DNA is similar to

- (a) Bacterial RNA
- (b) Bacterial plasmid
- (c) Bacterial Chromosome
- (d) eukaryotic DNA

33. Which portion of Golgi network is involved in Protein sorting?

- (a) Middle
- (b) Cis
- (c) Trans
- (d) Terminal

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34. Oxidation of urate, glycolate & amino acids in peroxisomes produces

- (a) CO₂
- (b) H₂O
- (c) H₂O₂
- (d) HCl

35. There are 3 types of selectins namely

- (a) M, P, L
- (b) A, B, C
- (c) E, P, L
- (d) E, G, H

36. Photosystem-II is also called as reaction centre

- (a) P660
- (b) P680
- (c) P700
- (d) P720

37. The active G-protein is always bound to

- (a) GTP
- (b) GMP
- (c) GDP
- (d) None

38. One molecule of ATP produces _____ kcal/mol of energy during its conversion to ADP

- (a) -3.7
- (b) +3.7
- (c) +7.3
- (d) -7.3

39. _____ is characterized by the preparation of chromosomes for segregation & the assembly of the machinery required for chromosome movement.

- (a) Anaphase
- (b) Prophase
- (c) Metaphase
- (d) Telophase

40. Meiosis is also called as

- (a) Reduction division
- (b) Equal division

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- (c) segregation division
- (d) None

41. Which end of the microtubule is fast growing end?

- (a) both
- (b) Minus
- (c) Plus
- (d) none

42. The difference in the structure of active & inactive G-protein lies in the differences in regions called as

- (a) Switch III & IV
- (b) Switch I & II
- (c) Switch II & III
- (d) Switch IV & V

43. The cadherins are

- (a) transmits signal from ECM to cytoplasm
- (b) a large family of glycoproteins
- (c) mediate Ca²⁺ dependent adhesion
- (d) All

44. Phosphorylation of which histone is required for chromosome compaction?

- (a) H3
- (b) H1
- (c) H2
- (d) H4

45. The catalytic subunit of MPF has the ability to transfer phosphate

- (a) To NAD
- (b) To ADP
- (c) From ATP
- (d) From NADP

46. The negative effect of high light intensity on photosynthesis is called

- (a) Photoactivation
- (b) Photolysis
- (c) Photoinhibition
- (d) All

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47. Plasmodesmata are found in _____

- (a) Both
- (b) Plant cells
- (c) Animal cells
- (d) None

48. Which subunit of ATP synthase rotates to allow H⁺ to enter the mitochondrial matrix?

- (a) Gamma
- (b) Alpha
- (c) Beta
- (d) Theta

49. Tight junctions are composed of _____ proteins

- (a) 4
- (b) 2
- (c) 3
- (d) 5

50. Human mitochondrial DNA encodes

- (a) 2 mRNA & 22 tRNA
- (b) 2 rRNA & 22 tRNA
- (c) 22 rRNA & 2tRNA
- (d) 22 mRNA & 2 tRNA

51. cAMP is a _____ messenger

- (a) Tertiary
- (b) Primary
- (c) secondary
- (d) Quaternary

52. What are G-proteins?

- (a) GMP binding proteins
- (b) GDP Binding Proteins
- (c) GTP binding proteins
- (d) GTP transferring protein

53. The arrangement of asteric spindle is also called as _____ arrangement

- (a) Sunset

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- (b) Sunburst
- (c) Sunrise
- (d) Star

54. The regulatory subunit of MPF is also called as

- (a) Cyline
- (b) Cycline
- (c) Cyclin
- (d) Cyclin Phosphate

55. Flavoproteins can accept as well as donate _____ during ETC

- (a) both
- (b) H atoms
- (c) electrons
- (d) none

56. Mitochondria & chloroplast is of _____ origin

- (a) Exospheric origin
- (b) Exosymbiotic origin
- (c) Endosymbiotic origin
- (d) None

57. _____ & _____ are produced during light reaction.

- (a) NADPH
- (b) ATP
- (c) ADP
- (d) Both a & c

58. The name mitosis has been derived from

- (a) Greek
- (b) Latin
- (c) German
- (d) English

59. Which end of the microtubule loses subunits?

- (a) Both
- (b) Plus
- (c) Minus
- (d) None

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60. Plasmodesmata allows _____ KD of molecules to pass through it.

- (a) 100
- (b) 1
- (c) 50
- (d) 150

61. Microfilaments are made up of

- (a) Collagen
- (b) Actin
- (c) Myosin
- (d) Troponin

62. Microfilaments are also called as

- (a) H-Actin
- (b) F-Actin
- (c) G-actin
- (d) Troponin

63. who isolated coupling factor 1 for the first time?

- (a) Racker
- (b) Moran
- (c) Fernandez
- (d) Morgan

64. PEP Carboxylase is found in C4 plants & _____ plants

- (a) Both
- (b) C3
- (c) CAM
- (d) None

65. Which component of microtubule is critical in its nucleation?

- (a) gamma
- (b) alpha
- (c) beta
- (d) delta

66. Who gave the concept of check points?

- (a) Leland hartwell
- (b) Leland Hartwell & Ted Weinert
- (c) Ray & Hopkins

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(d) Ted weinert

67. Energy flows from Light Harvesting complex ____ to Photosystem-II during photosynthesis.

- (a) II
- (b) IV
- (c) III
- (d) I

68. The activities that control cell cycle are focused primarily at 2 points- the transition between _____ & _____ and between _____ & _____

- (a) G1 & S, S & G2,
- (b) G1 & S, G2 & M
- (c) Go & G1, G1 & G2
- (d) G2 & M, M & Go

69. Which of the following is a function of hsp?

- (a) both
- (b) it acts as draught resistance protein
- (c) It helps in folding of proteins
- (d) none

70. The enzyme luciferase is a type of _____ enzyme

- (a) peroxisomal
- (b) Mitochondrial
- (c) chloroplast
- (d) vacuoler

71. Which is the site of plasmalogen formation in cells?

- (a) peroxisomes
- (b) mitochondria
- (c) chloroplast
- (d) vacuole

72. Chlorophyll absorbs _____ & _____ more strongly than green colour wavelength

- (a) Brown
- (b) Blue
- (c) Red
- (d) Both a & b

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73. The word 'mitos' means

- (a) thread
- (b) rope
- (c) wool
- (d) tube

74. Nucleolus is composed of

- (a) r-DNA
- (b) m-DNA
- (c) t-DNA
- (d) All

75. The N terminal sequence of a polypeptide which targets it to the sub cellular organelles are called as

- (a) Travelling peptide
- (b) Transfer peptide
- (c) Transit peptide
- (d) none

76. Which of these transmembrane protein takes part in transmembrane signalling?

- (a) both
- (b) Integrin
- (c) cadherins
- (d) none

77. What is the voltage produced by the combined effort of PSI & PSII?

- (a) 2 V
- (b) 4 V
- (c) 3 V
- (d) 1 V

78. _____ in Ca^{2+} concentration leads to disassembly of microtubules.

- (a) both
- (b) Elevation
- (c) Depression
- (d) none

79. The entry of a cell in M-Phase is initiated by

- (a) MFP
- (b) MPK

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- (c) MPF
- (d) MKP

80. _____ is a waste product of plant cells & is stored in vacuoles having clinical value

- (a) Rubisco
- (b) Digitalis
- (c) IAA
- (d) Acid hydrolases

81. Which subunit of ATP synthase rotates to allow H⁺ to enter the mitochondrial matrix?

- (a) Gamma
- (b) Alpha
- (c) Beta
- (d) Theta

82. Which membrane of mitochondria contains more protein?

- (a) Both contains the same amount of protein
- (b) Inner membrane
- (c) outer membrane
- (d) none

83. TIM-TOM complex is found in the _____ portion of the mitochondria

- (a) Outer membrane
- (b) Intermembrane space
- (c) Inner membrane
- (d) both b & c

84. The membrane that bound the vacuole is called

- (a) Cell wall
- (b) Cell membrane
- (c) Tonoplast
- (d) none

85. Structures & materials travelling from cell body towards the terminals of a neuron are said to move in an _____ direction.

- (a) both
- (b) Anterograde
- (c) Retrograde
- (d) none

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86. Hemicellulose present in the cell wall is a polysaccharide consisting of
- (a) galactose & maltose
 - (b) glucose & xylose
 - (c) glucose & fructose
 - (d) Lactose & Fructose
87. What is the distance between tubulin dimers in a protofilament?
- (a) 6nm
 - (b) 8nm
 - (c) 7nm
 - (d) 5nm
88. The IP3 mediates the _____ in the level of Ca²⁺ in the cytoplasm
- (a) Both
 - (b) Increase
 - (c) Decrease
 - (d) None
89. Two separate photosystems provide _____ volt of energy to transfer a pair of e from H₂O to NADP⁺
- (a) 3
 - (b) 1
 - (c) 2
 - (d) 4
90. MPF consists of _____ subunits
- (a) 3
 - (b) 1
 - (c) 2
 - (d) 4
91. What is the similarity between Bacterial plasmid & mitochondrial DNA?
- (a) Both a & b
 - (b) Both are circular
 - (c) Both does not contain histones
 - (d) None
92. Kidney failure in long term Diabetics results from an abnormal thickening of
- (a) afferent arteriole

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- (b) Basement membrane
- (c) Glomerulus
- (d) Efferent arteriole

93. Tight junctions are composed of _____ & _____ proteins

- (a) Collagen & Claudins
- (b) Occludins & Claudins
- (c) Occlusions & Claudins
- (d) Occludins & Selectins

94. Calmodulin is a _____ binding protein

- (a) Ca⁺
- (b) Zn²⁺
- (c) Zn⁺
- (d) Ca²⁺

95. Meiosis occurs in

- (a) Germ cells
- (b) Somatic cells
- (c) Hybrid cells
- (d) None

96. Who gave Binding change mechanism for the formation of ATP?

- (a) Racker
- (b) Paul Boyer
- (c) Fernandez
- (d) Morgan

97. Electron transport chain consists of _____ types of membrane bound electron carriers.

- (a) 5
- (b) 3
- (c) 4
- (d) 6

98. What is the significance of PEP Carboxylase in C₄ plants?

- (a) it operates at very low water concentration
- (b) it can operate at very low CO₂ concentration
- (c) it operates at very low O₂ concentration
- (d) it operates at very high CO₂ concentration

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99. Selectins recognises & binds to _____ present on the surface of cells.

- (a) Polysaccharides
- (b) Proteins
- (c) Oligosaccharides
- (d) fats

100. The cell cycle is divided into

- (a) M & G Phase
- (b) M & C Phase
- (c) M & S Phase
- (d) Interphase & M Phase

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