

# Monika's Nursing Academy Hamirpur

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## B.SC. ENTRANCE TEST-2020

- Bacterial cell wall is made up of:**
  - Chitin
  - Cellulose
  - Dextran
  - Peptidoglycan
- Syngenesious anthers and epipetalous stamens are found in:**
  - Compositae
  - Liliaceae
  - Malvaceae
  - Solanaceae
- Meiotic devisions occur in:**
  - Reproductive cells
  - Conductive cells
  - Meristematic cells
  - Vegetative cells
- The seed of Pinus is :**
  - Covered and non-endospermic
  - Naked and non-endospermic
  - Abaxially placed and covered
  - Adaxially placed naked and endospermic
- The petiole modified into the leaf-like structure is known as :**
  - Phylloclade
  - Phyllode
  - Cladode
  - Cladophyll
- A simple mechanical tissue of plants which is devoid of liqnin?**
  - Parenchyma
  - Sclerenchyma
  - Collenchymas
  - Chlorenchyma
- Guttation is mainly due to:**
  - Root pressure
  - Transpiration
  - Imbibitions
  - Osmosis
- Scutellum is the first leaf of :**
  - Gymnosperms
  - Monocots
  - Dicots
  - Pteridophytes
- The nucleus is absent in :**
  - Xylem parenchyma
  - Phloem parenchyma
  - Mature sieve cells
  - Companion cells
- Which of the following term includes all other terms?**
  - Classification
  - Nomenclature
  - Taxonomy
  - Systematic
- Kingdom protisa contains?**
  - Blue green algae
  - Fungi
  - Unicellular eukaryotes
  - All of these
- The water potential increases due to :**
  - Addition of solutes
  - Pressure
  - Evaporation
  - Afforestation
- Virus contains:**
  - Protein
  - DNA
  - RNA
  - (A) and either (B) or (C)
- Which of the following statement is totallywrong about the occurrence of notochord?**
  - It is present only in larval tail in ascidian
  - It is replaced by a vertebral column in adult frog

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- C. It is absent throughout life in humans from the very beginning
- D. It is present throughout life in Amphioxus
- 15. Which of the following elements is required for Photolysis of water :**
- A. Magnesium
  - B. Manganese
  - C. Calcium
  - D. Zinc
- 16. Which of the following are correctly matched with respect to their taxonomic classification?**
- A. Flying fish, cuttle fish, star fish, silver fish, pisces
  - B. House fly, butterfly, tsetse fly, silver fish, insect
  - C. Spiny anteater, seaurchin, sea cucumber, echinodermata
  - D. Centipede, millipede, spider, scorpion, Annelida
- 17. The translocation of sugars in angiosperms occurs in the form of :**
- A. Glucose
  - B. Fructose
  - C. Sucrose
  - D. Lactose
- 18. The kind of epithelium which forms the inner walls of blood vesels is**
- A. Squamous epithelium
  - B. Columnar epithelium
  - C. Cilated columnar epithelium
  - D. Cuboidal epithelium
- 19. In male cockroaches, sperms are stored in which part of the reproductive system?**
- A. Mushroom glands
  - B. Testes
  - C. Vas deferens
  - D. Seminal vesicles
- 20. Which of the following cell organelles is enclosed by a simple membrane?**
- A. Mitochondria
  - B. Chloroplasts
  - C. Lysosomes
  - D. Nuclei
- 21. In meosis, crossing over is initiated at:**
- A. Pachytene
  - B. Leptotene
  - C. Zygotene
  - D. Diplotene
- 22. Which of the following enzyme carries out the initial step in the digestion of milk in human beings?**
- A. Lipase
  - B. Rennin
  - C. Trypsin
  - D. Pepsin
- 23. The part of nephron involved in active reabsorption of sodium is:**
- A. Proximal convoluted tubule
  - B. Bowman's capsule
  - C. Descending limb of Henle's loop
  - D. Distal convoluted tubule
- 24. The part of nephron involved in active reabsorption of sodium is:**
- A. Proximal convoluted tubule
  - B. Bowman's capsule
  - C. Descending limb of Henle's loop
  - D. Distal convoluted tubule
- 25. The net gain of energy from one gram mole of glucose during aerobic respiration is:**
- A. 2 ATP
  - B. 4 ATP
  - C. 38 ATP
  - D. 40 ATP
- 26. The magnetic quantum number specifies:**
- A. Size of orbitals

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- B. Shape of orbitals  
C. Orientation of orbitals  
D. Nuclear stability
27. Total number of unpaired electrons in an atom of atomic number 29 is:  
A. 1  
B. 3  
C. 4  
D. 2
28. The explanation for the presence of three unpaired electrons in the nitrogen atom can be given by:  
A. Pauli's exclusion principle  
B. Hund's rule  
C. Aufbau's principle  
D. Uncertainty principle
29. Compound formed by  $sp^3d$  hybridization will have structure:  
A. Planar  
B. Pyramidal  
C. Angular  
D. Trigonal bipyramidal
30. Which of the following bond has the most polar character?  
A. C-O  
B. C-Br  
C. C-S  
D. C-F
31. Pure water is kept in a vessel and it remains exposed to atmospheric  $CO_2$ , which is absorbed, then its pH will be:  
A. Greater than 7  
B. Less than 7  
C. 7  
D. Depends on ionic product of water.
32. The highest oxidation state of Mn is shown by:  
A.  $K_2MnO_4$   
B.  $KMnO_4$   
C.  $MnO_2$   
D.  $MnO$
33. The conductivity of strong electrolyte  
A. Increases on dilution slightly  
B. Decreases on dilution  
C. Does not change with dilution  
D. Depends upon density of electrolytes itself
34. The relation between  $\Delta G$  and  $\Delta H$  is:  
A.  $\Delta H = \Delta G - T\Delta S$   
B.  $\Delta G = \Delta H - T\Delta S$   
C.  $T\Delta S - \Delta G = \Delta H$   
D.  $\Delta H = T\Delta G + \Delta S$
35. The lowest value of heat of neutralization is obtained for:  
A.  $HCl + NaOH$   
B.  $CH_3COOH + NH_4OH$   
C.  $NH_4OH + HCl$   
D.  $NaOH + CH_3COOH$
36. The specific rate constant of a first order reaction Depends on the  
A. Concentration of the reactants  
B. Concentration of the products  
C. Time of reaction  
D. Temperature of reaction
37.  $H_2 + I_2 \rightleftharpoons 2HI$   
In the above equilibrium system, if the concentration of the reactants at  $25^\circ C$  is increased, the value of  $K_c$  will:  
A. Increase  
B. Decrease  
C. Remains the same  
D. Depends on the nature of the reactants
38. Which one among the following does not have the hydrogen bond?  
A. Phenol  
B. Liquid  $NH_3$   
C. Water  
D. Liquid  $HCl$ .

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39. Which of the following is used to make non-stick cookware?
- Polysterene
  - Polyvinyl chloride
  - Polytetrafluoroethylene
  - Polyvinyl cyanide
40. Ethylmagnesium bromide reacts with methanol to produce:
- Methane
  - Methoxymethane
  - Ethane
  - Propane
41. The addition of HBr to an alkene in the presence of peroxide is the example of:
- Electrophilic addition reaction
  - Nucleophilic addition reaction
  - Free radical addition reaction
  - Formation of carbocation as an intermediate
42. Which of the following reagents can distinguish between ethylene and ethane?
- Dilute  $\text{KMnO}_4$
  - Ammoniacal  $\text{AgNO}_3$  solution
  - Ammoniacal  $\text{CuCl}$  solution
  - Fehling's solution
43. The carbon atom of benzene are:
- $\text{Sp}^2$  hybridized
  - $\text{Sp}$  hybridized
  - $\text{Sp}^3$  hybridized
  - Non-hybridized
44. Aromatic compounds undergo most easily:
- Nucleophilic addition
  - Nucleophilic substitution
  - Electrophilic addition
  - Electrophilic substitution
45. Which of the following compounds given a precipitate with silver nitrate?
- Chloroform
  - Iodoform
  - Both of these
  - None of these
46. Which of the following is used as a solvent, under the name 'westrosol'?
- $\text{Cl}_2\text{CH}-\text{CHCl}_2$
  - $\text{CCl}_2=\text{CHCl}$
  - $\text{Cl}_3\text{C}-\text{CCl}_3$
  - $\text{Cl}_2\text{C}=\text{CCl}_2$
47. Which of the following reagents can distinguish between methanol from ethanol?
- Na
  - $\text{PCl}_5$
  - $\text{CH}_3\text{COOH}$
  - $\text{I}_2$  and NaOH
48. In the given reaction  $\text{CH}_3-\text{CH}_2-\text{Br} \xrightarrow[\text{Ag}_2\text{O}]{\text{Moist}} \text{X}$  'X' will be
- Ethanol
  - Diethyl ether
  - Propane
  - Propyne
49. Which of the following reagents reacts differently with HCHO,  $\text{CH}_3\text{CHO}$  and  $\text{CH}_3\text{COCH}_3$ ?
- HCN
  - $\text{NH}_2\text{NH}_2$
  - $\text{NH}_2\text{OH}$
  - $\text{NH}_3$
50. Schiff's reagent given pink colour with:
- Aldehydes
  - Ethers
  - Ketones
  - Carboxylic acids.
51.  $\vec{A}$  is a vector with magnitude A, then the unit vector  $\vec{A}$  in the direction of  $\vec{A}$  is:
- $\frac{\vec{A}}{A}$

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- B.  $\vec{A} \vec{A}$   
C.  $\vec{A} \times \vec{A}$   
D.  $\vec{A} / A$
52. If  $\vec{A} \times \vec{B}$ , then the angle between A and B is:  
A.  $\pi/3$   
B.  $\pi/3$   
C.  $\pi$   
D.  $\pi/4$
53. The correct value of  $0^\circ\text{C}$  on the Kelvin scale is:  
A. 273.15 K  
B. 272.85 K  
C. 273 K  
D. 273.2 K
54. A body moves from the rest with a constant acceleration of  $5 \text{ m/s}^2$ , its instantaneous speed (m/s) at the end of 10s is:  
A. 50  
B. 5  
C. 2  
D. 0.5
55. The angular speed of a flywheel making 120 revolutions/minute is:  
A.  $2\pi \text{ rad/s}$   
B.  $4\pi^2 \text{ rad/s}$   
C.  $\pi \text{ rad/s}$   
D.  $4\pi \text{ rad/s}$
56. When a bus suddenly takes a turn, the passengers are thrown outwards because of:  
A. Inertia of direction  
B. Acceleration of motion  
C. Speed of motion  
D. Both (B) and (C)
57. A man pushes a wall and fails to displace it, he does:  
A. Negative work  
B. Positive work  
C. No work at all  
D. Maximum work
58. If kinetic energy of a body is increased by 300% its momentum will be increased by:  
A. 100%  
B. 150%  
C.  $\sqrt{300} \%$   
D. 175%
59. The direction of angular velocity is along:  
A. The tangent to the circular path  
B. The inward radius  
C. The outward radius  
D. The axis of rotation
60. Where will it be profitable to purchase 1 kilogram of sugar?  
A. At poles  
B. At equator  
C. At  $45^\circ$  latitude  
D. At  $40^\circ$  latitude
61. The area of cross-section of a steel wire ( $\gamma = 2.0 \times 10^{11} \text{ N/m}^2$ ) is  $0.1 \text{ cm}^2$ . The force required to double its length will be  
A.  $2 \times 10^{12} \text{ N}$   
B.  $2 \times 10^{11} \text{ N}$   
C.  $2 \times 10^{10} \text{ N}$   
D.  $2 \times 10^{16} \text{ N}$
62. If the external torque acting on a system  $\vec{\tau} = 0$ , then?  
A.  $\omega = 0$   
B.  $\alpha = 0$   
C.  $J = 0$   
D.  $F = 0$
63. The maximum load a wire can withstand breaking, when its length is reduced to half of its original length, will be:  
A. Double

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- B. Half  
C. Four times  
D. Remains constant
64. Blood is flowing at the rate of  $200 \text{ cm}^2 \text{ s}^{-1}$ , in a capillary of cross-sectional area  $0.5 \text{ m}^2$ . The velocity of flow, in  $\text{m s}^{-1}$  would be:  
A. 0.1  
B. 0.2  
C. 0.3  
D. 0.4
65. At what temperature, volume of an ideal gas at  $0^\circ$ , becomes triple?  
A.  $546^\circ\text{C}$   
B.  $182^\circ\text{C}$   
C.  $819^\circ\text{C}$   
D.  $646^\circ\text{C}$
66. Which of the following equation does not represent a simple harmonic motion?  
A.  $Y = a \sin \omega t$   
B.  $Y = a \cos \omega t$   
C.  $Y = a \sin \omega t + b \cos \omega t$   
D.  $Y = a \tan \omega t$
67. When  $10^{19}$  electrons are removed from a neutral metal plate, the electronic charge on it is:  
A.  $-1.6 \text{ C}$   
B.  $+1.6 \text{ C}$   
C.  $10^{19} \text{ C}$   
D.  $10^{-19} \text{ C}$
68. What is the angle between the electric dipole moment and the electric field strength due to its being on equatorial line?  
A.  $0^\circ$   
B.  $90^\circ$   
C.  $180^\circ$   
D. None of the above
69. Two wires A and B of the same material and same mass have radii  $2r$  and  $r$  respectively. If resistance of wire A is  $34 \text{ ohm}$ , then resistance of B will be:  
A.  $544 \text{ ohm}$   
B.  $272 \text{ ohm}$   
C.  $68 \text{ ohm}$   
D.  $17 \text{ ohm}$
70. The direction of magnetic line of forces, close to a straight conductor carrying current will be:  
A. Along the length of the conductor  
B. Radially outward  
C. Circularly in a plane perpendicular to the conductor  
D. Helical
71. An electron moves in a circular orbit with a uniform speed 'V', it produces a magnetic field 'B' at the centre of the circle. The radius of the circle is proportional to:  
A.  $B/V$   
B.  $V/R$   
C.  $\sqrt{\frac{V}{B}}$   
D.  $\sqrt{\frac{B}{V}}$
72. Which of the following material is non-magnetic ?  
A. Iron  
B. Nickel  
C. Cobalt  
D. Brass
73. The phase angle between e.m.f. and current in LCR series ac circuit is:  
A.  $0 \text{ to } \pi/2$   
B.  $\pi/4$   
C.  $\pi/2$   
D.  $\pi$

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74. The wavelength  $\lambda_e$  of an electron and  $\lambda_p$  of a photon of same energy 'E' are related by:

- A.  $\lambda_p \propto \lambda_e$
- B.  $\lambda_p \propto \lambda_e^2$
- C.  $\lambda_p \propto \sqrt{\lambda_e}$
- D.  $\lambda_p \propto \sqrt{\frac{1}{\lambda_e}}$

75. The radius of the Bohr orbit in the ground state of hydrogen atom is 0.5 Å. The radius of the orbit of the electron in the third excited state of He<sup>+</sup> will be:

- A. 8 Å
- B. 4 Å
- C. 0.5 Å
- D. 0.25 Å

Directions: Fill in the blanks with right option:

76. This is the lady ..... purse has been stolen.

- A. Whom
- B. Whose
- C. Who
- D. Which

77. .... knowledge is a dangerous thing.

- A. Some
- B. Any
- C. The little
- D. A little

78. He is jealous ..... his neighbor.

- A. From
- B. To
- C. Of
- D. At

79. Do not tell ..... lie.

- A. A
- B. An
- C. The

D. No article

80. The man in the ..... row is my uncle.

- A. Farther
- B. Further
- C. Latter
- D. Last

81. Will you give me ..... water.

- A. Much
- B. Many
- C. Some
- D. Any

82. It is ten O'clock ..... my watch.

- A. At
- B. By
- C. With
- D. For

83. Eggs are sold by ..... dozen.

- A. A
- B. An
- C. The
- D. No article

Directions: Choose one word for these groups of words.

84. A person who does his job flawlessly

- A. Meticulous
- B. Systematic
- C. Correct
- D. Errorless

85. A place where clothes are washed and ironed:

- A. Washroom
- B. Bakery
- C. Laundry
- D. Depot

86. One who attends to sick people and prescribes medicines:

- A. Dietician
- B. Physician

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- C. Palmist
- D. Druggist

**87. A handwritten text, difficult to read:**

- A. Faulty
- B. Dirty
- C. Illegible
- D. Incorrect

**Directions : Choose the opposite of the following.**

**88. Straight**

- A. Chaste
- B. Unbending
- C. Crooked
- D. Pious

**89. Abuse :**

- A. Respect
- B. Defame
- C. Disparage
- D. Ill-use

**90. Adversity :**

- A. Calamity
- B. Ignorance
- C. Prosperity
- D. Generosity

**91. In india, where the national institute of virology is situated?**

- A. Bombay
- B. Pune
- C. Hyderabad
- D. Lucknow

**92. Who is Dr. 'Tedross gabriasis'?**

- A. WHO Chief
- B. UNICEF Chief
- C. A Pandemic Expert
- D. None of the above

**93. Who is the chairperson of Rajya Sabha?**

- A. Shri Om Birla
- B. Shri Harivansh Prasad

- C. Dr. Hamid Ansari
- D. Shri Vankiah Naidu

**94. Which Article of our constitution gave special status to jammu and Kashmir, and which now stands withdrawn or abrogated?**

- A. Article 368
- B. Article 369
- C. Article 370
- D. Article 371

**95. The 2020 Olympic Games, which have now been postponed, are scheduled to be held at**

- A. Madrid
- B. Tokyo
- C. Paris
- D. Seoul

**96. Choose the correct statement in context to the policy of 'lock down' followed in the country with regard to pandemic caused by COVID-19.**

- A. It helped break the chain of infection
- B. It helped to reduce to 'doubling rate' of the infected persons
- C. It provided valuable time to prepare our health infrastructure to cope with it
- D. All the above

**97. During epidemic caused by COVID-19 the commonly used sanitizer for spray purposes is.**

- A. 1% solution of potassium hypochloride
- B. 1% solution of sodium hypochloride
- C. 10% solution of potassium hypochloride
- D. 10% solution of sodium hypochloride



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98. Which gas is mainly responsible for 'global warming'?

- A. CO<sub>2</sub>
- B. CO
- C. SO<sub>2</sub>
- D. NO<sub>2</sub>

99. How many states now exist in india?

- A. 25
- B. 26
- C. 27
- D. 28

100. From which of the following places, the virus COVID-19 is believed to have spread?

- A. Huwai
- B. Wuhan
- C. Beijing
- D. shanghai

