

3rd SELF ASSESSMENT TEST-2020

CONDUCTED BY: SINDH ACADEMY UMERKOT

1. Read the following passage carefully and choose the right option(s): (1 point)

“Idleness is a great sin, and I certainly don’t like any of my friends to be idle or sluggish. You must not mind my speaking quite plainly to you. Of course I should not dream of doing so if I were not your friend. But what is the good of friendship if one cannot say exactly what one means? Anybody can say charming things and try to please and to flatter, but a true friend always says unpleasant things, and does not mind giving pain. Indeed, if he is a really true friend he prefers it, for he knows that then he is doing good.”

Q# The author is annoyed of:

- Greatness in friendship
- Goodness in friendship
- Idleness in friendship
- Truth in friendship

2. Read the following passage carefully and choose the right option(s): (1 point)

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Q# It can be inferred from the passage that the practice of flattery:

- Keeps the friendship intact
- Spoils one’s nature
- Promote one’s friendship
- Brings closeness between two friends

3. Read the following passage carefully and choose the right option(s):

(1 point)

“The sun and the other stars we see in the sky are all intensely hot-far too hot for life to be able to obtain or retain a footing on them, so also no doubt were the ejected fragments of the sun when they were first thrown off. Gradually they cooled, until now they have but little intrinsic heat left, their warmth being derived almost entirely from the radiation which the sun pours down upon them. In course of time, we know not how, when, or why, one of these cooling fragments gave birth to life.”

Q# Which of the following statements about the sun and stars is true?

- Life is undoubtedly possible on them
- It is not too hot for life to live on them
- Life cannot be made possible on them
- Life is possible only on the stars

4. Read the following passage carefully and choose the right option(s):

(1 point)

“The sun and the other stars we see in the sky are all intensely hot-far too hot for life to be able to obtain or retain a footing on them, so also no doubt were the ejected fragments of the sun when they were first thrown off. Gradually they cooled, until now they have but little intrinsic heat left, their warmth being derived almost entirely from the radiation which the sun pours down upon them. In course of time, we know not how, when, or why, one of these cooling fragments gave birth to life.”

Q# What gave birth to life possibly?

- Warm objects
- Cooling fragments
- Intrinsic heat
- The sun and stars

5. Each and every instructor in this building _____ for a new facility by next year. (1 point)
- Hope
 - Hopes
 - Have hoped
 - Are hoping
6. Look at the clouds – It _____ in a few minutes. (1 point)
- Will rain
 - Rains
 - Is going to rain
 - Raining
7. She always _____ her pet dog for a walk before breakfast. (1 point)
- Takes
 - Would took
 - Is taking
 - Was taking
8. Hundreds of people died _____ cholera in the recent outbreak. (1 point)
- From
 - With
 - Of
 - In
9. He has been playing all the afternoon _____ getting on with his homework. (1 point)
- Though
 - Instead of
 - Despite of
 - In
10. The water here is not pure, _____ I'm drinking soda instead. (1 point)
- So
 - That
 - Though
 - And

11. Not only the students but also their teacher _____ called to the principal's office. (1 point)

- Has been
- Have been
- Having been
- Are being

12. We had no sooner started cooking _____ there was a power cut. (1 point)

- Than
- When
- As
- That

13. Hardly had they spoken those words _____ the door opened and Riaz himself (1 point) stood before them.

- Than
- As
- That
- When

14. You can ____ drive your car to the grocery store ____ ride your bike. (1 point)

- Either, or
- So, as
- Both, also
- Not only, but

15. **FIND THE ERROR:** (1 point)

I am to busy to take you to the theatre this evening; I'm short of money, besides.

- To busy
- To take
- The theater
- Besides

16. **FIND THE ERROR:** (1 point)

I am sure that you'll be glad to saw him again next week.

- I am sure
- You'll be
- To saw
- Again

17. **SYNONYM:**

Q# PLEDGE:

- Promise
- Observation
- Respect
- Belief

18. **SYNONYM:**

(1 point)

Q# COMBAT:

- Pain
- Fight
- Problem
- Anxiety

19. **ANTONYM:**

(1 point)

Q# COMPETE:

- Surrender
- Contest
- Upset
- Envy

20. **ANTONYM:**

(1 point)

Q# MORTAL:

- Immortal
- Hopeless
- Faithless
- Deadly

21. In the reaction: $2\text{SO}_2 + \text{O}_2 \rightarrow 2\text{SO}_3$

(1 point)

2 mole of sulfur dioxide is mixed with 2 mole of oxygen and allowed to react.
What is the maximum number of moles of SO_3 that can be produced?

- 4 mole
- 2 mole
- 1 mole
- 3 mole

22. If you titrate 1M H₂SO₄ solution against 100ml of 1M NaOH solution, what volume of H₂SO₄ in milliliters, will be needed for neutralization?

- 25
- 50
- 100
- 200

23. What is the approximate pH of a 0.001M solution of NaOH?

- 3
- 11
- 3
- 10

24. Which is correct statement about acid and base?

- According to Arrhenius concept acid is proton donor and base is proton acceptor
- According to Bronsted Lowery concept acid is H⁺ donor and base OH⁻ donor in aqueous solution
- According to Lewis concept acid is electron pair donor and base is electron pair acceptor
- The Value of K_a, K_b and pH is used to determine strength of acid and base

25. The Molarity of 0.2N H₂SO₄ is:

- 0.8
- 0.2
- 0.4
- 0.1

26. Which one of the following statement is not true regarding catalysis?

- A catalyst remain unchanged after the end of the reaction
- A catalyst can initiate a reaction
- A catalyst does not alter the equilibrium in a reversible reaction
- Catalyst are sometimes very specific in terms of reaction

27. Which of the following statement is true?

- The reaction is fast if the activation energy is very low
- The activation energy forward reaction can never be greater than that of backward reaction
- A catalyst increase the rate of backward reaction
- Reaction rate increases with temperature because the activation energy decreases at high temperature

28. Which of the following acid is probably the weakest?

- HI
- HNO₃
- H₂SO₄
- H₂S

29. Stronger reducing agent have:

- Greater reduction potential
- Lower Redox potential
- Greater oxidation potential
- Lower oxidation potential

30. Nitro benzene reacts with conc: HNO₃ in presence of conc: H₂SO₄ to produce:

- 1, 2-dinitro benzene
- 2, 3-dinitro benzene
- 1, 4-dinitro benzene
- 1, 3-dinitro benzene

31. Metal bicarbonate on heating produce:

- Metal oxide and CO₂
- Metal hydroxide and water
- Metal oxide and CO₂ and H₂O
- Metal carbonate, carbon dioxide and water

32. 2-methyl-2-propanol is produced when CH₃MgI reacts with:

- Acetone
- Acetaldehyde
- Formaldehyde
- CO₂

33. In carbocation (Arenium Ion) the carbon which is bonded with electrophile is:

- Sp³ hybrid
- Sp² hybrid
- Sp hybrid
- None of these

34. Among the following which is cation complex?

- K₃[Fe(CN)₆]
- [Cu(NH₃)₄]SO₄
- [Co(NH₃)₃Cl₃]
- Fe₄[Fe(CN)₆]₃

35. Ethyl alcohol reacts with PCl_5 to give:

- $\text{C}_2\text{H}_5\text{Cl} + \text{H}_3\text{PO}_3$
- $\text{C}_2\text{H}_5\text{Cl} + \text{POCl}_3$
- $\text{C}_2\text{H}_5\text{Cl} + \text{POCl}_3 + \text{HCl}$
- $\text{C}_2\text{H}_5\text{Cl} + \text{H}_3\text{PO}_3 + \text{HCl}$

36. Which compound undergoes $\text{S}^{\text{N}}2$ reaction? (1 point)

- 1-Bromo butane
- 2-Bromo butane
- 2-chloro 2-methyl propane
- 2-methyl-3-bromo pentane

37. Sodium acetate on heating with soda lime gives. (1 point)

- Acetaldehyde
- Acetic acid
- Methane
- Methanol

38. Aniline is: (1 point)

- Meta directing
- It depends on incoming group
- Ortho Para directing
- None of these

39. Metamers have: (1 point)

- Same alkyl groups
- Same melting point and boiling point
- Different No. of carbon atoms on either side of functional group
- Different functional Group

40. In laboratory lunar caustic is used to detect. (1 point)

- Carbonate Ion
- Nitrate Ions
- Sulphate Ions
- Halide Ions

41. Chalcopyrite contains about: (1 point)

- 17% copper
- 28% copper
- 6% copper
- 46%

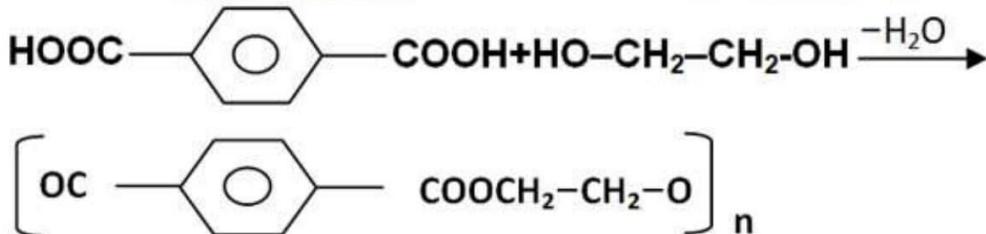
42. The formation of cynohyrin from formaldehyde is an example of:

- Electrophilic substitution
- Nucleophilic addition
- Nucleophilic substitution
- Free radical substitution

43. When acyl Halide is heated with sodium salt of carboxylic acid, the compound formed is:

- Ester
- Alkane
- Acid anhydride
- Carboxylic acid

44.



- Perspex
- Nylon
- Rayon
- Terylene

45. Among the following which is neutral amino acid?

- Lysine
- Glutamic acid
- Arginine
- Leucine

46. An element of atomic weight 40 has 2,8,8,2 electron configurations. Which one of statement is incorrect from given one?

- It belongs to II A group
- It has 20 neutron
- The formula of its oxide is MO_2
- It has more positive characters than IIIA group.

47. When Bauxite is treated with carbon & nitrogen at 1800°C to form aluminum (1 point) nitride and SiO₂:
- Impurities reduced
 - Impurities oxidized
 - Impurities react to form complex
 - Impurities remain unaffected
48. Solution of chlorine in water is strong oxidizing agent because: (1 point)
- It directly combine with Non-metals like N₂ to oxidized them
 - Formation of HOCl, which is used as an oxidizing agent
 - In HOCl greater attraction of protons and repulsion of electrons
 - All of Them
49. Copper sulphate treated with excess of ammonium solution to produce a compound of: (1 point)
- Pale Blue Glutinous precipitate
 - Deep blue complex
 - White complex because of cuprous formation
 - Pale Yellow complex
50. Chemical name of Rochelle Salt is: (1 point)
- Potassium chromium nitrate
 - Sodium Potassium nitrate
 - Potassium Calcium tartrate
 - Sodium potassium tartrate
51. What reagent is used in the dehydro halogenation of an alkyl halide to obtain an (1 point) alkene:
- Sodium in liquid
 - Sodium borohydride
 - Alcoholic potassium hydroxide
 - Concentrated sulfuric acid
52. Saponification value of oil is: (1 point)
- Number of Kg of KOH required complete saponify 1 gm of oil
 - Number of gm of KOH required complete saponify 1 gm of oil
 - Number of milligram of KOH required complete saponify 1 gm of oil
 - Volume of KOH solution required complete saponify 1 gm of oil

53. Tocopherol is also known as:

- Vitamin A
- Vitamin D
- Vitamin K
- Vitamin E

54. Etching is one of the process in which_____.

- Glass is synthesized
- Glass is decorated
- Fertilizer prepared by its constituents
- Soap is prepared

55. Which of the following is not an addition polymer?

- Polyethylene
- Nylon
- PVC
- PVA

56. The number of moles of CO_2 which contains 16g of oxygen:

- 0.25
- 0.50
- 1.0
- 1.50

57. Gases deviate from ideal behavior at high pressure. Which of the following correct for non-ideality?

- At high pressure, the gas molecules move in one direction only
- At high pressure, the collision between the gas molecules increased manifold
- At high pressure, the volume of gas becomes insignificant
- At high pressure, the intermolecular attraction becomes significant

58. H_2O shows a maximum boiling point among hydrides of group VI elements due to: (1 point)

- Very small size of oxygen
- Lone pair electrons present on oxygen
- Enhanced electronegative character of oxygen
- Bent structure of oxygen

59. The amount of heat at constant volume is called as:

- Internal energy
- Enthalpy
- Entropy
- Temperature

60. Equal weight of methane and helium are mixed in an empty container at 25°C . (1 point)
The fraction of total pressure exerted by helium is:

- 1/2
- 4/5
- 8/9
- 3/5

61. For a reaction $\text{A} + 2\text{B} \rightarrow \text{C} + \text{D}$, the active mass of B is doubled and that of A is tripled. It is observed that rate of reaction: (1 point)

- Increase eight times
- Increase nine times
- Increase twelve times
- Increase eighteen times

62. The radii of the fourth orbit of the hydrogen atom calculated from Bohr's model (1 point) is:

- 8.464 A°
- 2.116 A°
- 2.41 A°
- 3.4 A°

63. For which system does the equilibrium constant K_c has unit of (M^{-1}): (1 point)

- $\text{N}_2 + 3\text{H}_2 \rightleftharpoons 2\text{NH}_3$
- $\text{H}_2 + \text{I}_2 \rightleftharpoons 2\text{HI}$
- $2\text{NO}_2 \rightleftharpoons \text{N}_2\text{O}_4$
- $2\text{HF} \rightleftharpoons \text{H}_2 + \text{F}_2$

64. Buffer solution is prepared by mixing together:

- Strong acid and strong base
- Weak acid and weak base
- Weak base and its salt of strong acid
- Weak acid and its salt of weak base

65. There are _____ co-ordinate covalent bond(s) in NH_4^+ ion.

(1 point)

- One
- Two
- Three
- Four

66. Quantum number values for 4f orbitals are:

(1 point)

- $n = 4, l = 2$
- $n = 3, l = 4$
- $n = 4, l = 1$
- $n = 4, l = 3$

67. $\text{CH}_3\text{OH}_{(l)} + \text{H}_{2(g)} \rightleftharpoons \text{CH}_4_{(g)} + \text{H}_2\text{O}_{(l)} \quad \Delta H = -ve$

(1 point)

The reaction to the right can be decreased by:

- Increasing volume of reaction vessel
- Removing some amount of CH_4
- Increasing temperature
- Increasing pressure

68. The false statement about indicator is:

(1 point)

- They are weak acids or weak bases
- They show end point in acid base titration
- Phenolphthalein gives pink color in solution having pH = 12
- Methyl orange is used for strong base and weak acid

69. KMnO_4 on heating to red hot gives.

(1 point)

- $\text{K}_2\text{MnO}_4 + \text{MnO}_2 + \text{O}_2$
- $\text{K}_2\text{MnO}_3 + \text{MnO}_2 + \text{O}_2$
- $\text{K}_2 + \text{MnO}_2 + \text{O}_2$
- None of these

70. Which of the following elements has lowest melting point?

(1 point)

- Li
- Mg
- Sr
- Be

71. Which of the following compound, strongest acid is:

(1 point)

- HC≡CH
- C₆H₅OH
- C₂H₆
- C₂H₅OH

72. Ethylene can be separated from acetylene by passing the mixture through:

(1 point)

- Fuming H₂SO₄
- Pyrogallol
- Ammonical Cu₂Cl₂
- Charcoal powder

73. The covalent bond length is the shortest in which one of the following bonds:

(1 point)

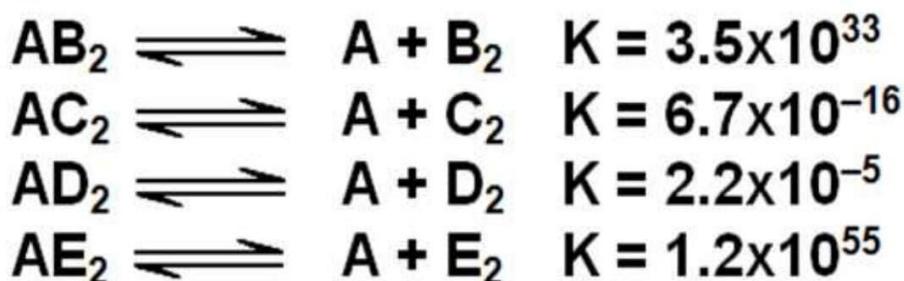
- N≡N
- C≡C
- C≡N
- H-F

74. Among the following which has zero dipole moment:

(1 point)

- H₂O
- HCl
- BF₃
- H₂S

75. Given:



Which compound is most stable?

- AB₂
- AC₂
- AD₂
- AE₂

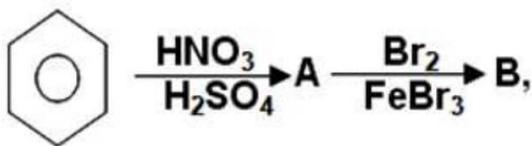
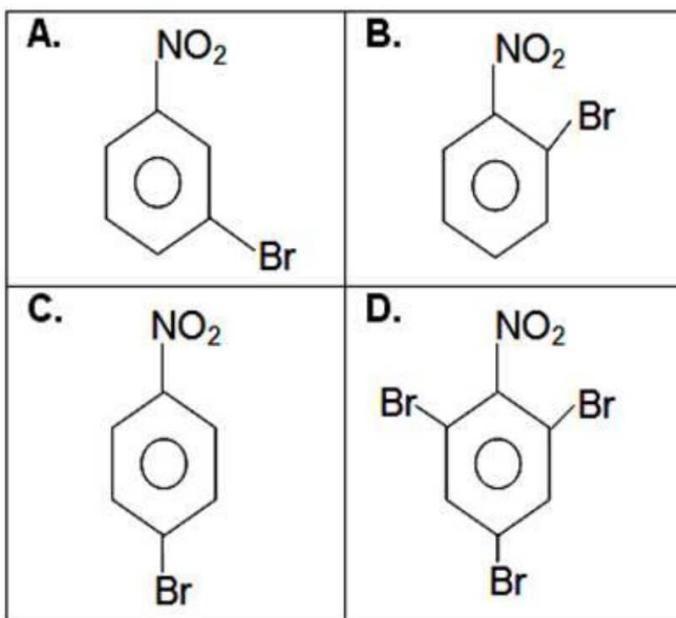
76. The oxidation state of oxygen is most negative in which of the following compounds:

- OF₂
- H₂O
- KO₂
- Na₂O₂

77. In alkanes from methane to decane which property will numerically decrease along the series?

- Solubility in water
- Boiling point
- Density
- Isomers

78.

**The compound B is:**

- A
- B
- C
- D

79. Example of unit cell with crystallographic dimension $a = b = c$, $\alpha = \beta = \gamma \neq 90^\circ$ is. (1 point)

- AgNO₃
- Graphite
- Aragonite
- CuSO₄.5H₂O

80. How many electrons can fit in the orbital for which $n=3$ and $l=1$, $m=0$: (1 point)

- 14
- 2
- 6
- 10

81. During light dependent reactions, both NADPH and ATP molecules are produced. In which of the following reactions both of these molecules are consumed?

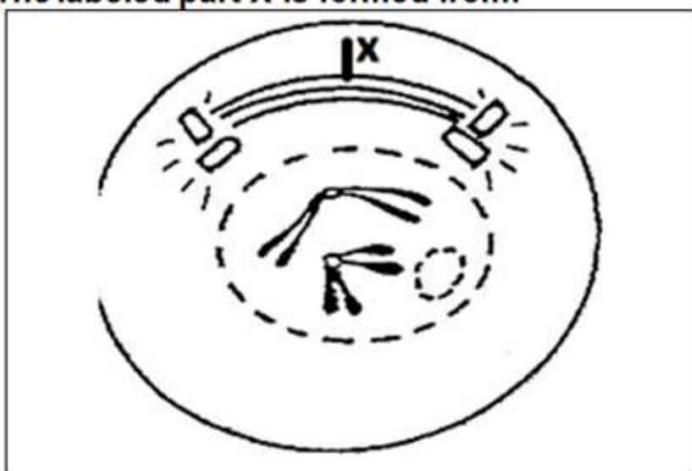
- I) $\text{CO}_2 + \text{RuBP} \rightarrow \text{C}_6$
- II) $\text{PGA} \rightarrow \text{PGAL}$
- III) $\text{PGAL} \rightarrow \text{RuBP}$

- I only
- II only
- III only
- I, II and III

82. A nucleotide consists of:

- Sugar and phosphate
- Sugar, nucleic acid and phosphate
- Base and sugar
- Phosphate, sugar and base

83. The labeled part-X is formed from:



- Nucleus
- Ribosomes
- Centrioles
- Mitochondria

84. In chloroplast, the fluid outside thylakoid is referred as:

- Crista
- Cisterna
- Stroma
- Matrix

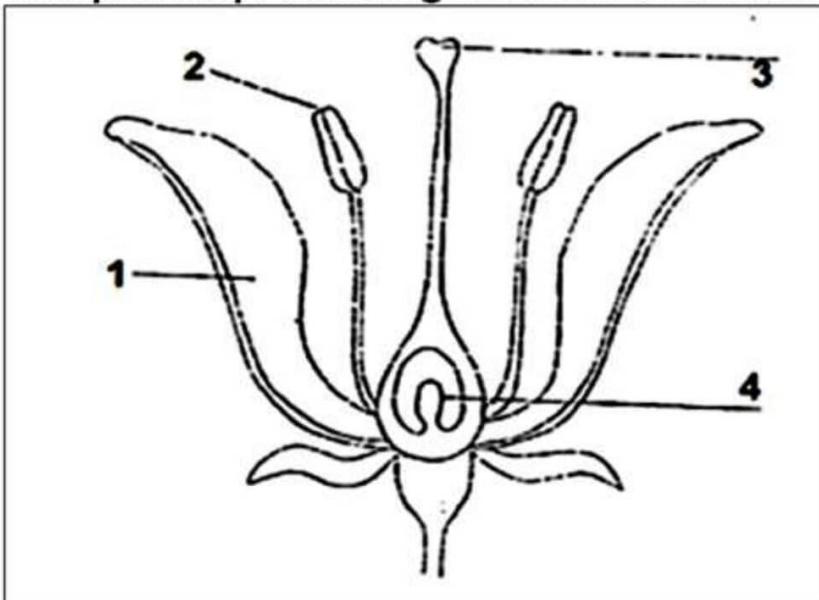
85. In hierarchy of biological classification, _____ is inserted between phylum and class. (1 point)
- Order
 - Family
 - Sub-order
 - Sub-phylum
86. Colds are viral infections of upper respiratory tract and are caused by: (1 point)
- Rhabdoviruses
 - Rhinoviruses
 - Paramyxoviruses
 - Arboviruses
87. The centre of nitrogen fixation in *Nostoc* is: (1 point)
- Heterocyst
 - Hormogonium
 - Vegetative cell
 - Akinete
88. *Rhizobium radicicola* is a: (1 point)
- Symbiotic bacterium
 - Parasitic bacterium
 - Photosynthetic bacterium
 - Chemosynthetic bacterium
89. In *Phytophthora infestans*, sexual reproduction is _____. (1 point)
- Isogamous
 - Homogamous
 - Homogametic
 - Oogamous
90. Sexual cycle of *Plasmodium* is completed in the: (1 point)
- Salivary glands of female *Anopheles* mosquito
 - Human RBCs
 - Gut of female *Anopheles* mosquito
 - Human liver
91. Which among the following are related with spoilage of food stuff? (1 point)
- Mycorrhizal fungi
 - Parasitic fungi
 - Saprophytic fungi
 - Smuts

92. Where zygote formation occurs in Ascomycotes?

- Trichogyne
- Ascogonium
- Antheridium
- Sporangium

93. The below diagram represents a typical flower. The pollen producing structure is indicated by:

(1 point)



- Labeled part-1
- Labeled part-2
- Labeled part-3
- Labeled part-4

94. The cluster of sporangia in fern plant is called:

(1 point)

- Sporophyll
- Sorus
- Spore
- Sporophyte

95. The botanical name of oat is:

(1 point)

- Oryza sativa*
- Triticum indicum*
- Avena sativa*
- Hordeum vulgare*

96. Which one of the following pairs matches correctly? (1 point)

Option	Part-I	Part-II
A.	Protonephridia	Platyhelminthes
B.	Carapace	Molluscs
C.	Water vascular system	Pisces
D.	Mantle	Arthropods

- A
- B
- C
- D

97. In sponges, mesenchyme consists of: (1 point)

- Pinacocytes
- Choanocytes
- Amoebocytes & spicules
- A & B

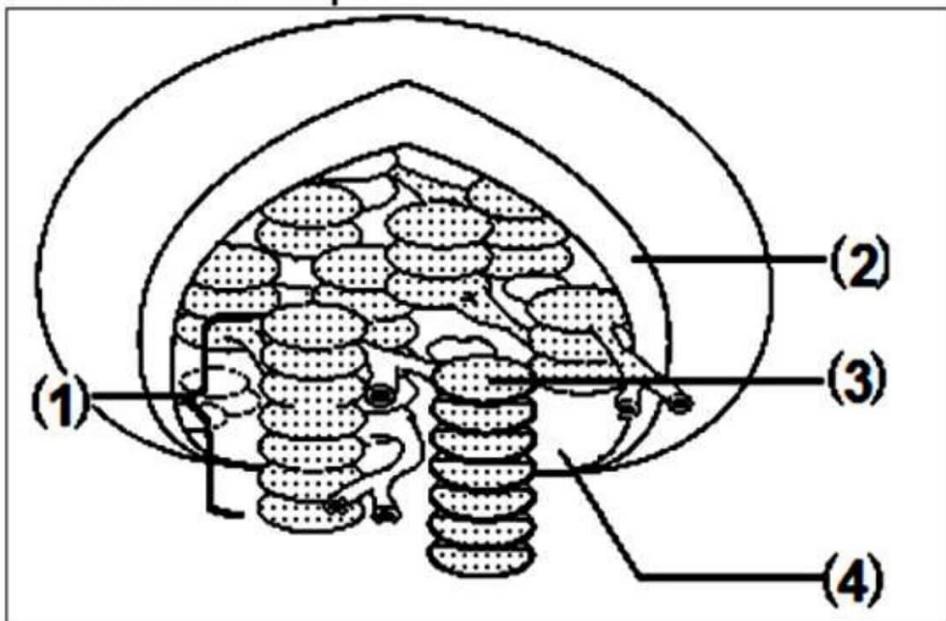
98. Indus Dolphin is found in River-Indus, it belongs to class: (1 point)

- Chondrichthyes
- Osteichthyes
- Amphibia
- Mammalia

99. The end product of glycolysis is: (1 point)

- CO₂
- Pyruvic acid
- Acetyl CoA
- Citric acid

100. The process of conversion of CO_2 into sugar occurs in which labeled part?



- Labeled part-1
- Labeled part-2
- Labeled part-3
- Labeled part-4

101. The movement of product of photosynthesis is called phloem translocation; and it occurs: (1 point)

- From xylem to phloem
- From phloem to xylem
- From leaves to roots
- From source to sink

102. The zymogen cells of stomach secrete: (1 point)

- HCl
- Pepsinogen
- Chyme
- Mucus

103. During swallowing mechanism, the G is closed by H so bolus enters the oesophagus not the trachea. (1 point)

Option	G	H
A.	Mouth	Lips
B.	Epiglottis	Glottis
C.	Mouth	Palate
D.	Glottis	Epiglottis

- A
- B
- C
- D

104. During the process of exhalation, diaphragm becomes: (1 point)

- Flattened
- Relaxed
- Straightened
- A & C

105. Respiratory centre is located in: (1 point)

- Cerebrum
- Thalamus
- Cerebellum
- Medulla oblongata

106. Which among the following is not an advantageous effect of transpiration? (1 point)

- It helps in ascent of sap.
- Plants shed their leaves in unfavourable conditions.
- It saves plants from overheating.
- It helps plants intake of raw food materials from the soil.

107. The contractions of heart chambers produce heart sounds. The ventricular systole produces:

(1 point)

- DUP sound
- LUB sound
- Heart murmur
- Hissing sound

108. _____ is called as 'silent killer'.

(1 point)

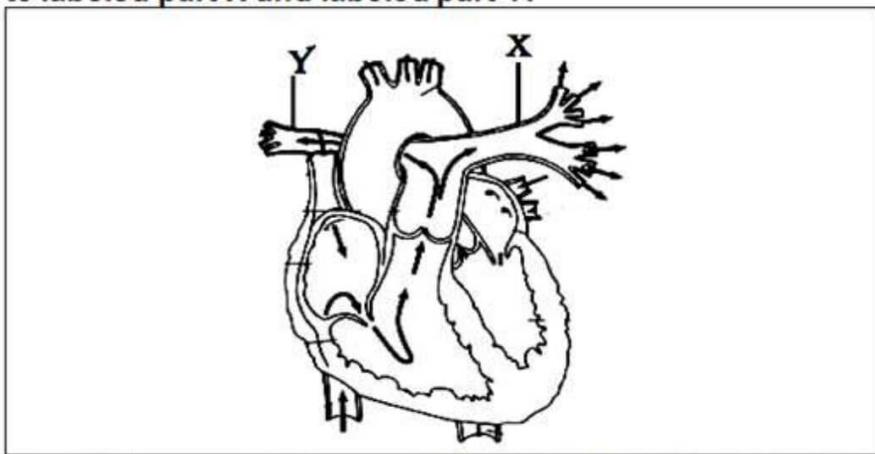
- Myocardial infarction
- Stroke
- Hypertension
- Hemiplegia

109. Find the correct row of answers regarding leucocytes and their functions. (1 point)

Option	Leucocytes	Function
A.	Lymphocytes	Engulf bacteria
B.	Neutrophils	Engulf bacteria
C.	Basophils	Antihistamine properties
D.	Eosinophils	Produce heparin

- A
- B
- C
- D

110. Refer to below diagram. Indicate the supply of blood to labeled part-X and labeled part-Y.



Option	Blood	Labeled part-X	Labeled part-Y
A.	Deoxygenated	Lungs	Body systems
B.	Oxygenated	Lungs	Lungs
C.	Deoxygenated	Lungs	Lungs
D.	Deoxygenated & oxygenated blood	Lungs	Body systems

- A
- B
- C
- D

111. The conservation of forests and parks:

(1 point)

- Helps to reduce soil fertility
- Helps to promote flooding
- Helps to reduce infectious diseases
- Helps to reduce soil erosion

112. Identify the component that is proteineous in nature.

(1 point)

- Wax
- ATP
- Oestrogen
- Cellulase

113. Glycerol is the:

(1 point)

- Backbone molecule for DNA
- Backbone molecule for ATP
- Backbone molecule for disaccharide
- Backbone molecule for triglycerides

114. An active enzyme composed of cofactor and polypeptide chain of amino acids is called: (1 point)

- Coenzyme
- Apoenzyme
- Holoenzyme
- Ribozyme

115. The true statement(s) about peroxisome is/are: (1 point)

- I. It helps in detoxification of alcohol.
- II. It contains enzyme for transferring hydrogen atom to oxygen forming H_2O_2 .
- III. It contains enzyme that breaks hydrogen peroxide.

- I only
- II only
- III only
- I, II and III

116. How many pyruvic acid molecule(s) is/are produced per glucose molecule during glycolysis? (1 point)

- 1
- 2
- 4
- 6

117. In ascomycetes, asexual reproduction occurs by means of: (1 point)

- Ascogonia
- Ascocarps
- Ascospores
- Conidia

118. Human stomach can produce: (1 point)

- I) Renin
- II) HCl
- III) Mucus
- I only
- II and III
- I and II
- I, II and III

119. In the mouth, lysozyme enzyme is produced which:

- Moists the food
- Breaks down saliva
- Digests polysaccharide
- Kills bacteria

120. What is the major function of vacuole? (1 point)

- I) Provides structure to the cell.
 - II) Contains genetic information thereby controls cell.
 - III) Contains sap for keeping the cell turgid.
 - IV) Site where chemical reactions occur.
- I only
 - III only
 - II and III
 - I, II, III and IV

121. Vasa recta; the network of blood vessels that:

(1 point)

- Surrounds filtering unit
- Surrounds proximal and distal convoluted tubules
- Supplies blood to glomerulus
- Surrounds loop of Henle

122. Freshwater bony fishes have:

(1 point)

- Hypertonic internal environment
- Hypotonic internal environment
- Isotonic internal environment
- Paratonic internal environment

123. Find the odd one out from other bones.

(1 point)

- Dentary
- Sacrum
- Sternum
- Femur

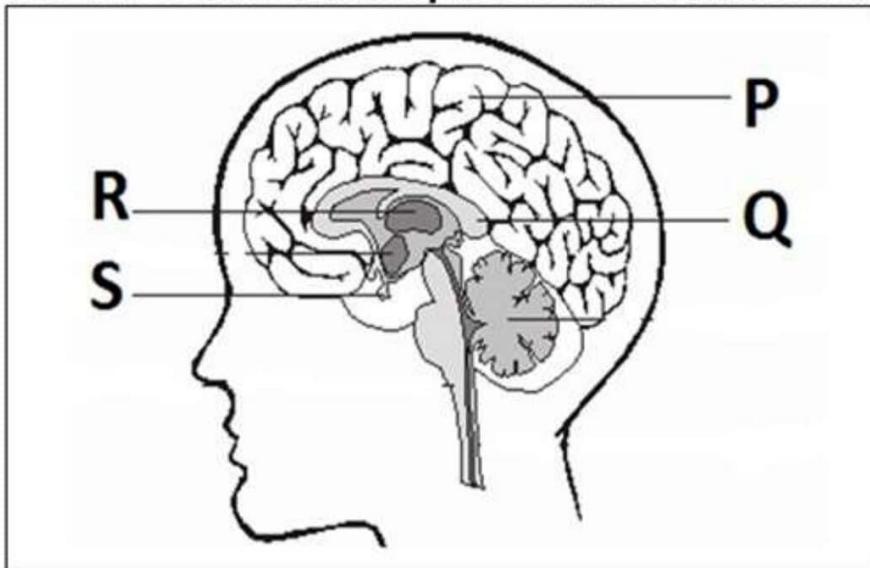
124. Which one of the following options helps to open the binding site during muscle contraction? (1 point)

- Vitamin D
- Sarcomeres
- ATP molecules
- Calcium ions

125. The centre of reflexes is located in: (1 point)

- Cerebrum
- Cerebellum
- Medulla oblongata
- Hypothalamus

126. The two cerebral hemispheres are connected by: (1 point)



- Labeled part-P
- Labeled part-Q
- Labeled part-R
- Labeled part-S

127. The 24 hour rhythm of our body is regulated by: (1 point)

- Melatonin hormone
- Adrenaline hormone
- Thymosin hormone
- Releasing hormone

128. Catkin is a type of inflorescence found in:

- Mulberry
- Banana
- Amaranthus
- Coriander

129. Parthenogenesis is commonly observed in:

- Frogs
- Earthworms
- Snails
- Honeybees

130. Corpus luteum is responsible for:

- Milk production
- Maintenance of pregnancy
- Childbirth
- Ovulation

131. During the development of chick:

- Skull is formed from ectoderm
- Skull is formed from mesoderm
- Skull is formed from endoderm
- Skull is formed from hypoblast

132. The process of translation:

- Is observed in nucleus
- Is observed in DNA
- Is observed in ribosomes
- Is observed in nucleolus

133. Which one of the following codon of genetic code codes for phenylalanine?

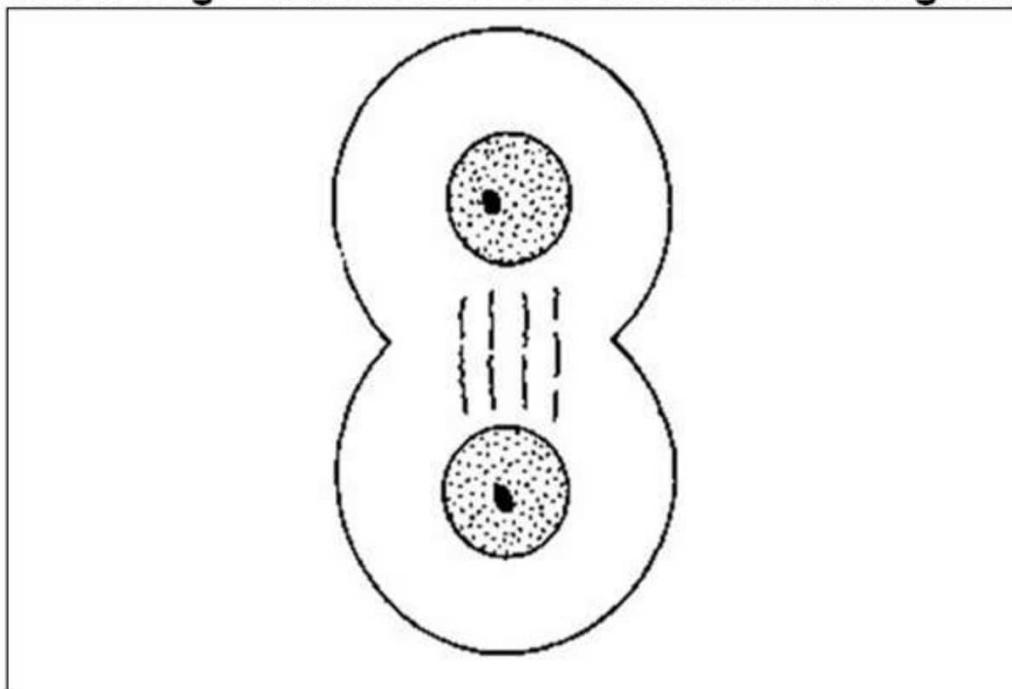
(1 point)

- UUC
- UUA
- AUG
- UUG

134. The pairing of homologous chromosomes is known as:

- Linkage
- Crossing over
- Terminalization
- Synapse

135. Which stage of mitosis is shown in below diagram? (1 point)



- Interphase
- Anaphase
- Telophase
- Cytokinesis

136. X-shaped structure is: (1 point)

- Gene
- DNA
- Chiasma
- RNA

137. In human beings, 44A + XXY individuals are with:

- Turner's syndrome
- Klinefelter's syndrome
- Down's syndrome
- Patau's syndrome

138. In pea plant, allele T is dominant and t is recessive. Which one of the following cross would give a 1:1 of the two phenotypes among the offspring? (1 point)

- TT X tt
- Tt X TT
- Tt X Tt
- Tt X tt

139. The son of normal male and heterozygous female has: (1 point)

- 0% chance of colourblindness
- 25% chances of colourblindness
- 50% chances of colourblindness
- 100% chances of colourblindness

140. Mom's phenotype is blood group-B and genotype is BO. Dad's phenotype is blood group-O. The offspring would be: (1 point)

- 100% blood group-B
- 100% blood group-O
- 50% blood group-AB or 50% blood group-O
- 50% blood group-B or 50% blood group-O

141. DNA fingerprinting is not associated with: (1 point)

- Settling disputes on parentage
- Diagnosing inherited disorders
- Identifying the criminals
- Production of insulin

142. Genetically engineered bacteria are not used to produce: (1 point)

I) Tangelo II) Beefalo III) Phenylalanine

- I only
- II only
- I and II
- I, II and III are produced by genetically engineered bacteria

143. Many human families observe circumcision ceremony in infant males since (1 point) thousands of years, despite that every baby boy in each generation is born with fore-skin. This proves that:

- Natural selection is operating the process of evolution
- Environmental forces are affecting the process of evolution
- Acquired characters are not inherited
- Mutation brings variations

144. Greenhouse effect is related to: (1 point)

- CO₂ gas
- CFCs
- SO₂ gas
- Pesticides

145. Development of plants and animals of area are influenced by: (1 point)

- Topographic factors
- Edaphic factors
- Both A and B
- None of these

146. Which one of the following is/are not considered as biotic component of an ecosystem? (1 point)

- I) Water
- II) Light
- III) Edaphic factors
- IV) Pyrophilus fungi

- I and IV
- II and IV
- I, II and III
- I, II, III and IV

147. A hawk in a grassland ecosystem is: (1 point)

- Producer
- Herbivore
- Secondary consumer
- Tertiary consumer

148. In a sea, where the light cannot penetrate is/are:

I) Abyssal zone

II) Bathyl zone

III) Photic zone

I only

II only

I and II

I, II and III

149. The deficiency of a blood protein factor-VIII is known as:

Sickle cell anaemia

Albinism

Asthma

Haemophilia

150. In Pakistan, population is increasing at the rate of:

1%/year

2%/year

3%/year

4%/year

151. When the body is overheated, the skin:

Respond by increasing keratin production.

Respond by increasing heart rate.

Respond by increasing blood flow to the dermis.

Respond by decreasing blood flow to the dermis.

152. Which one of the following act(s) like the sieve?

Glomerulus

Loop of Henle

Bowman's capsule

A and C

153. The organisms not classified as osmoconformers are:

Crab

Hagfish

Amoeba

Both A and B

154. Annual rings=

- Primary xylem
- Primary phloem
- Secondary xylem
- Secondary phloem

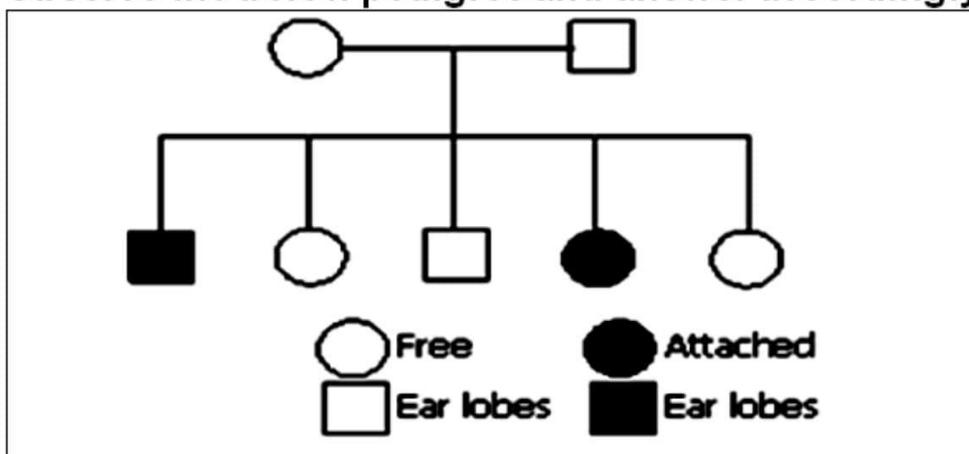
155. Which one of the following plays important role in the initiation of muscle fibre (1 point) contraction?

- Calcium ions
- ATP molecules
- Removal of nerve stimulus
- All of these

156. If a bone in the palm is broken, it means: (1 point)

- Carpal bone has broke
- Metacarpal bone has broke
- Tarsal bone has broke
- Metatarsal bone has broke

157. Observe the below pedigree and answer accordingly. (1 point)



- Parents are heterozygous
- X-linked recessive disorder
- Parents are homozygous dominant
- Parents are homozygous recessive

158. Prolonged bleeding is a nutritional disease due to deficiency of:

(1 point)

- Vitamin B
- Vitamin K
- Vitamin C
- Vitamin A

159. Identify the components of limbic system.

(1 point)

- I) Hippocampus II) Pons III) Hypothalamus IV) Amygdala

- I, II and III
- I, III and IV
- II, III and IV
- I, II, III and IV

160. Which one of the following hormones may be used to treat cardiac arrest?

(1 point)

- Thyroxine
- Releasing hormone
- Epinephrine
- Androgens

161. The dimensions of volume and acceleration are respectively:

(1 point)

- LT^{-1} and LT^{-2}
- LT^{-2} and LT^{-1}
- L^3 and LT^{-2}
- L^4T^{-1} and LT

162. Find the unit vector parallel to the vector

(1 point)

$$\vec{C} = 12\hat{i} + 24\hat{j} - 8\hat{k}$$

- $\frac{12}{7}\hat{i} + \frac{24}{7}\hat{j} - \frac{8}{7}\hat{k}$
- $\frac{3}{7}\hat{i} + \frac{6}{7}\hat{j} + \frac{2}{7}\hat{k}$
- $\frac{3}{7}\hat{i} + \frac{6}{7}\hat{j} - \frac{2}{7}\hat{k}$
- $\frac{12}{7}\hat{i} - \frac{24}{7}\hat{j} + \frac{8}{7}\hat{k}$

163. Find the projection of $\vec{Y} = 4\hat{i} - 6\hat{j} + 12\hat{k}$ onto the direction of vector $\vec{Z} = 2\hat{i} + 4\hat{j} + 4\hat{k}$. (1 point)

- 7/3
- 16/3
- 3/7
- 9/7

164. A body of mass 5kg, initially at rest, is moved by a horizontal force of 2N on a smooth horizontal surface. Find the work done by the force in 10s: (1 point)

- 40J
- 30J
- 50J
- 20J

165. A car is waiting at a traffic signal and when the signal turns green, the car starts ahead with a constant acceleration of 2m/s^2 , at the same time a bus travelling with a constant speed of 10m/s overtakes and passes the car. How far beyond its starting point will the car overtake the bus? (1 point)

- 40m
- 130m
- 100m
- 120m

166. If $\vec{V} = \lim_{\Delta t \rightarrow 0} \frac{\vec{\Delta r}}{\Delta t}$, then \vec{V} will be: (1 point)

- Average velocity
- Uniform velocity
- Instantaneous velocity
- All of these

167. A ball is thrown vertically upward with the velocity of 98m/sec, how high does the ball rise? (1 point)

- 196m
- 200m
- 280m
- 490m

168. A body is at rest and some force is applied on it, when it is just on the point of sliding, then at this instant friction between surface and body is termed as: (1 point)
- Static friction
 - Dynamic friction
 - Limiting friction
 - All of these
169. A rescue helicopter drops a package of emergency ration to a stranded party on the ground. If the helicopter is travelling horizontally at 40m/s at a height 98m above the ground, where does the package strike the ground relative to the point where it was released? ($g=9.8\text{m/s}^2$) (1 point)
- 120.9m
 - 130.5m
 - 140.7m
 - 178.8m
170. To analyze the projectile motion, which of the following assumptions is/are required to make? (1 point)
- (I) The effect of air resistance is negligible
 - (II) The rotation of earth does not affect the motion
 - (III) The acceleration due to gravity 'g' is constant over the range of motion and is directed downward
- I only
 - I, II & III
 - III only
 - I and III only
171. 1 radian is equal to: (1 point)
- 360°
 - 180°
 - 100°
 - 57.3°
172. Rotating wheel of radius 0.5m has an angular velocity of 5 rad/s at some instant (1 point) and 10rad/sec after 5sec . Find the angular acceleration of a point on its rim.
- 1 rad/s^2
 - 2 rad/s^2
 - 3 rad/s^2
 - 4 rad/s^2

173. Which one of the following statement is true concerning the motion of an ideal projectile launched at an angle of 45° to the horizontal? (1 point)
- The acceleration vector points opposite to the velocity vector on the way up and in the same direction as the velocity vector on the way down
 - The speed at the top of the trajectory is zero
 - The object's total speed remains constant during the entire flight
 - The vertical component of velocity decreases on the way up and increases on the way down
174. A body in translatory motion possesses _____ and _____ in the same way a (1 point) body in rotatory motion possesses _____ and _____.
- Angular velocity, Linear velocity, Angular momentum, Linear
 - Linear velocity, Linear momentum, Angular velocity, Angular momentum
 - Angular momentum, Angular velocity, Linear momentum, Linear velocity
 - Linear momentum, Angular velocity, Angular momentum, Linear
175. If we go away from the surface of the earth a distance equal to the radius of the (1 point) earth, the value of 'g' will become:
- One fourth
 - One eight
 - One ninth
 - One sixteenth
176. When the body moves in the direction of the gravitational force i.e. towards the (1 point) earth, the work is done by the force of gravity on the body and it is _____, whereas when the body moves against the direction of gravitational force, the corresponding work done is _____.
- Negative, Positive
 - Positive, Negative
 - Negative, Negative
 - Positive, Positive
177. A 70kg sportsman runs up a long flight of stairs in 4 seconds, If the vertical (1 point) height of the stairs is 4.5m what will be his power output?
- $7.7 \times 10^2 \text{W}$
 - $8.8 \times 10^3 \text{W}$
 - $9.5 \times 10^3 \text{W}$
 - $10.2 \times 10^4 \text{W}$

178. A student is performing a lab experiment on simple harmonic motion. He has (1 point) two different springs with force constant K_1 and K_2 and two different blocks of masses m_1 and m_2 . If $K_1 = 2K_2$ and $m_1 = 2m_2$, then mark correct statement.

- The spring with force constant K_1 & the block of mass m_1 has larger time period
- The spring with force constant K_2 & the block of mass m_2 has larger time period
- Both combination would give the same period
- None of these

179. A 260 Hz fork produces 4 beats/sec when sounded with another fork of (1 point) unknown frequency. What are two possible values for the unknown frequency?

- 260Hz & 256Hz
- 264Hz & 256Hz
- 265Hz & 256Hz
- 268Hz & 252Hz

180. A string fixed at both ends, has a length of 6m and supports a standing wave (1 point) with a total no. of 4 nodes. If a transverse wave can travel at 40m/s down the rope, what is the frequency of this wave?

- 6.7Hz
- 10Hz
- 13.3Hz
- 20Hz

181. When we place an opaque object having thick edges between a point source of (1 point) light and a screen, we will observe:

- (I) A shadow of the obstacle is formed on the screen
- (II) No light reaches within the geometrical shadow of the obstacle at the screen
- (III) Outside the geometrical shadow the screen is uniformly illuminated

- I only
- II only
- III only
- I, II & III

182. What will be the position of the object, when a convex lens of focal length 16cm (1 point)

is used to form an erect image, which is twice as large as the object?

16cm from the lens

24cm from the lens

3cm from the lens

8cm from the lens

183. The linear magnification produced by a lens is defined as the ratio of the: (1 point)

(I) Size of the image to the size of object

(II) Size of the lens to the size of object

(III) Size of the lens to the size of the image

I only

II only

III only

I, II and III

184. System absorbs 1000 joules of heat and delivers 600 joules of work, while losing 100 joules of heat by conduction to the atmosphere, the change in the internal energy of the system will be: (1 point)

600 Joules

900 Joules

300 Joules

400 Joules

185. The temperature of a body at 100°C is increased by $\Delta\theta$ as measured on the (1 point)

Celsius scale and final temperature becomes $\Delta\theta+100$. How is this final temperature expressed on the Kelvin scale?

$\Delta\theta + 373$

$\Delta\theta + 273$

$\Delta\theta+100$

$\Delta\theta$

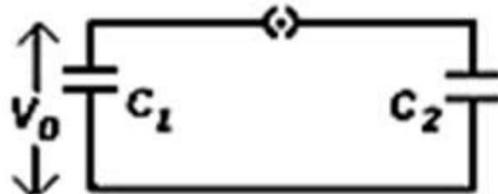
- 186 A capacitor C_1 is charged by a potential difference V_0 as shown in the figure. This (1
· charging battery is then removed and the capacitor is connected to an uncharged point)
capacitor C_2 . What is the final potential difference V across the
combination?

A. $v_0 \frac{C_1 - C_2}{C_1}$

B. $v_0 \frac{C_1}{C_1 - C_2}$

C. $v_0 \frac{C_1}{C_1 + C_2}$

D. $v_0 \frac{C_1 + C_2}{C_1}$



- A
- B
- C
- D

187. Which of the following statements about electric field is/are incorrect? (1 point)

- The electric field strength due to a point charge varies as $1/r^2$
- Electric field strength is a vector quantity
- The electric field strength at a point is a measure of the force exerted on a unit positive charge at that point
- The electric field strength is zero at all points where the potential is zero
- None of these

188. Two wires, when connected in series, have an equivalent resistance of 18Ω , and (1 point)
when connected in parallel, an equivalent resistance of 4Ω . Find their resistances.

- $9\Omega, 9\Omega$
- $12\Omega, 6\Omega$
- $26\Omega, 2\Omega$
- $19\Omega, 2\Omega$

189. What happens to current and resistance if the voltage across the ends of (1 point)
conductor is doubled?

- Current doubles and resistance doubles
- Current doubles and resistance is halved
- Current remains same but resistance doubles
- Current doubles but resistance remains the same

190. What is the magnetic flux density at a point 3cm from the long straight wire, (1 point) when there is a current of 25A in the wire?

$$(\mu=4\pi \times 10^{-7} \text{ T-m/A})$$

0.23x10⁻¹ T

1.67x10⁻⁴ T

2.99 x 10⁻⁶ T

3.63 x 10⁻⁸ T

191. An ideal transformer is one which:

(1 point)

Have efficiency less than 100%

Have efficiency more than 100%

Have efficiency equal to 100%

None of these

192. A galvanometer has a resistance of 10 Ohms and gives full scale deflection when (1 point) a current of 0.001 ampere flows in it. Find out the value of the shunt resistance to convert it into an ammeter of range 10 amperes.

0.001 Ohm

0.002 Ohm

0.003 Ohm

0.004 Ohm

193. The process of addition of an impurity in a pure semi conducting material is (1 point) called:

Forward biasing

Reverse biasing

Doping

Crystallography

194. Which of the following statements is true for photoelectric effect?

- Photoelectric current is proportional to the frequency of the radiation used
- Photoelectric current is proportional to the intensity of light used
- Photoelectric current is proportional to the wavelength of radiation used
- Photoelectric current is proportional to energy of the radiation used

195. Which of the following statements is not consistent with Bohr's set of postulates (1 point) regarding the hydrogen atomic model?

- Energy levels of the electrons are stable and discrete
- An electron emits or absorbs radiation only when making a transition from one energy level to another
- To jump from a lower energy to a higher energy an electron must absorb a photon of precisely the right frequency such that the photon's energy equals the energy difference between the two orbits.
- To jump from a higher energy to a lower energy, an electron always absorbs a photon of a frequency such that photon's energy is exactly the energy difference between the two orbits.

196. Which of the following is/are true about beta negative decay?

- I) It results in an atom with a smaller atomic number
 - II) It results in the emission of an electron
 - III) It results in an atom with one less neutron
 - IV) It results in an atom with one more proton
- I only
 - II only
 - II and III only
 - II, III & IV only

197. The safe limit of radiation exposure is up to extent of:

- 10 to 20 times from natural source
- 5 to 100 times from natural source
- 10 to 200 times from natural source
- 10 to 100 times from natural source

198. Sources of radiation are:

- Cosmic rays from sun
- X-rays from diagnostic instruments
- U-V rays from sun
- All of these

199. Gamma rays can produce ionization in which of the following way/s?

(1 point)

- (I) It may lose all its energy in a single encounter with electron of an atom (photoelectric effect)
- (II) It may lose only a part of its energy in an encounter (Compton effect)
- (III) Very few of very high energy γ -ray photons may impinge directly on heavy nuclei, be stopped and annihilated giving rise to electron–positron pairs (The materialization of energy)

- I only
- II only
- II and III only
- I, II and III

200. A car moves around a circular path of a constant radius at a constant speed, (1 point)
which of the following statements is true?

- The car's acceleration is directed toward the center of circulation path
- The car's acceleration is constant
- The car's acceleration is zero
- The car's velocity is directed toward the center of circulation path
- A and B both