

**MCAT Grand Test 02****PHYSICS**

**Directions:** For each question below you are given four choices. SELECT ANY ONE THAT IS MOST APPROPRIATE ANSWER

**ALL ANSWER MUST BE GIVEN ON THE ANSWER SHEET.**

YOUR ANSWERS MUST BE INDICATED BY LETTERS (A, B, C, D) AND NOT BY THE WORDS THEMSELVES.

1. When two bodies separate instantaneously after collision. The collision is said to be?
- (a) Partially elastic
  - (b) Partially inelastic
  - © Perfectly inelastic
  - (d) Perfectly elastic

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2. According to the second law of motion, acceleration is proportional to:
- (a) Force
  - (b) Time
  - (c) Mass
  - (d) Distance
3. When the object is placed at  $2f$  of convex lens then the image formed behind the lens will be
- A) At the focus
  - B) At  $2f$
  - C) Beyond  $2f$
  - D) Between  $f$  and  $2f$
4. When the object is placed at principal focus of a convex lens then the image is formed at
- A) Same distance
  - B) Infinity
  - C) Same side of lens
  - D) Centre of curvature
5. Which one of the following cannot measure wavelength of X-rays in any way
- A) Bragg's law
  - B) Diffraction grating
  - C) Compton effect
  - D) Photo electric effect
6. Which one of the following properties is not found in both sound and light

- A) Interference      B) Diffraction      C) Polarization      D) Reflection

7. The relation between time period  $T$  and angular velocity  $\omega$  is given by  
 (a)  $T = 2\pi\omega$       (b)  $T = \omega/2\pi$       (c)  $T = 2\pi/\omega$       (d)  $T = v\omega$
8. When a body moves in a circle, the angle between its linear velocity  $v$  and angular velocity  $\omega$  is  
 (a)  $0^\circ$       (b)  $45^\circ$       (c)  $90^\circ$       (d)  $180^\circ$
9.  $\pi$  radians =  
 (a)  $90^\circ$       (b)  $180^\circ$       (c)  $60^\circ$       (d)  $30^\circ$

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10. In racing car moving along a circular path the friction at the wheels and banking of roads provides the  
 (a) Centripetal Force      (b) Centripetal Acceleration      (c) Centre of Mass      (d) Centrifugal Force
11. The time period is defined as the time required to traverse ..... by a revolving body.  
 (a) One radian      (b) 180 degrees      (c) One revolution      (d) 90 degrees
12. Which of the following particles can induce artificial radio-activity in certain nuclei?  
 (a)  $\alpha$ -particle      (b)  $\beta$ -particle      (c)  $\gamma$ -particle      (d) All of the above
13. Identify the alpha-particle?  
 (a)  ${}_1\text{H}^1$       (b)  ${}_1\text{H}^2$       (c)  ${}_1\text{H}^3$       (d)  ${}_2\text{He}^4$
14. Which of the following particles move with velocity of light?  
 (a)  $\alpha$ -particle      (b)  $\beta$ -particle      (c)  $\gamma$ -particle      (d) All of the above
15. The torque on a body will be zero if the angle between  $\vec{r}$  and  $F$  is zero or:  
 a.  $90^\circ$       b.  $180^\circ$       c.  $270^\circ$       d. None

16. What is kinetic energy of a body of mass 10 kg moving with velocity  $1\text{m/s}^2$ ?
- a. 10 Joules                      b. 20 Joules                      c. 5 Joules                      d. 2.5 Joules
17. Which of the following lists of physical quantities consists only of vectors:
- a. Time, temperature, velocity                      b. Force, volume, momentum
- c. Velocity, acceleration, mass                      d. Force, acceleration, velocity
18. If two forces each of magnitude 5N act along the same line on a body, then the magnitude of their resultant will be
- a. 5N                      b. 10N                      c. 20N                      d. 30N

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19. Applied force  $F$  on a body of mass  $m$ , moving with acceleration  $a$  is
- a.  $m/a$                       b.  $a/m$                       c.  $ma$                       d.  $m : a$
20. A force of 1000N acts on a body for 0.01 sec. And changes its velocity from  $10\text{m/s}$  to  $20\text{m/s}$ , what will be the impulse?
- a. 100 N-sec                      b. 50 N-sec                      c. 10 N-sec                      d. 5 N-sec
21. When a projectile moves upwards, its vertical component of velocity
- a. Remains constant    b. Decreases    c. Increases    d. Becomes equal to horizontal velocity
22. The center of gravity of a cylinder is at
- a. The center of the top of the cylinder                      b. The center of the bottom of the cylinder
- c. A point on curved side of the cylinder                      d. The mid-point of axis
23. If a transverse wave has a speed of  $100\text{m/sec}$  and frequency of 100 hertz then its wavelength will be
- a. 1 m                      b. 10 m                      c. 100 m                      d. 1000 m
24. Which one of the following can be used to distinguish between the sounds of a note played on piano and violin?

- a. Intensity of sound      b. Pitch of sound      c. Quality of sound      d. Loudness

25. A lens which is thicker in the middle and thinner at the edge is called

- a. Concave lens      b. Convex lens      c. Plano-concave lens      d. Convex-concave lens

26. A straight line passing through center of curvature of the two spherical surfaces of a lens is called

- a. Diameter of the lens      b. Radius of the lens      c. Principal axis      d. Principle focus

27. A double convex lens acts as a diverging lens when the object is placed

- a. At the focus      b. At  $2f$       c. Between  $f$  and  $2f$       d. Within the focal length

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28. A round hole is cut in a metal plate and it is cooled. What will be the effect of the cooling on the size of the hole?

- a. Remains same      b. Shrinks      c. Expands in size      d. None of these

29. When air at 300K and 1 atmospheric pressure is compressed to one-twentieth of its original volume and 30 atmospheric pressure, the new temperature will be

- a. 9000 K      b. 100 K      c. 450 K      d.  $450^{\circ}\text{C}$

30. A mass accelerates uniformly when the resultant force acting on it

- A) is zero      B) is constant but not zero      C) increases uniformly with respect to time      D) is proportional to the displacement of the mass from a fixed point.

31. Which one of the following statements about the charge on the electron is incorrect?

- A) It can be measured in coulomb.      B) It is equal in magnitude to the charge on the proton.      C) It is equal in magnitude to the charge on the beta-particle.      D) It can be determined experimentally only if the mass of the electron is known.

32. Einstein's theory of relativity suggests that
- (A) The laws of physics are the same in all inertial frames of reference
  - (B) The speed of light in free space is universal constant
  - (C) The speed of light is independent of the speed of the observer
  - (D) All of the above
33. Photoelectric effect is obtained most conveniently with
- A) Visible light
  - B) Infrared light
  - C) Ultraviolet light
  - D) Radio waves
34. Positrons are produced during
- A) X-ray production
  - B) Ionization
  - C) Annihilation
  - D) Pair production
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35. Paschen series is obtained when all the transitions electron terminate on
- A) Third orbit
  - B) Second orbit
  - C) 1st orbit
  - D) 4th orbit
36. The binding energy per nucleon is
- (A) Minimum for heavy nuclei
  - (B) Maximum for heavy nuclei
  - (C) Maximum for light nuclei
  - (D) Maximum for medium weight nuclei
37. Light of wavelength  $\lambda$  is incident normally on a diffraction grating for which the slit spacing is equal to  $3\lambda$ . What is the sine of the angle between the second order maximum and the normal?
- A)  $1/6$
  - B)  $1/3$
  - C)  $2/3$
  - D)  $3/2$
38. Lenses of large aperture suffer from the defects of
- (A) Spherical aberration
  - (B) Chromatic aberration
  - (C) Neither spherical nor chromatic aberration
  - (D) None of these
39. In an ideal gas, the molecules have
- (A) Kinetic energy only
  - (B) Potential energy only
  - (C) Both kinetic and potential energy
  - (D) None of these

40. The difference between  $C_p$  and  $C_v$  is equal to  
A) One calorie      B) Boltzman constant      C) Universal gas constant      D) Zero
41. An induced e.m.f is produced in a circuit when  
(A) Magnetic flux changes through the circuit  
(B) Magnetic flux remains constant in the circuit  
(C) There is no magnetic flux produced in the circuit      (D) All of the above
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42. Which one of the following is the example of reversible process  
(A) Heat produced by current      (B) Melting of ice  
(C) Work done against friction      (D) None of these
43. Three capacitors of capacitance  $2\mu\text{F}$  each are connected in parallel. Their equivalent capacitance will be  
A)  $0.66\mu\text{F}$       B)  $4\mu\text{F}$       C)  $6\mu\text{F}$       D)  $1.5\mu\text{F}$
44. Which of the following is used to convert A.C into D.C  
A) A voltmeter      B) A transistor      C) A transformer      D) A rectifier

**END OF PHYSICS SECTION**

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**CHEMISTRY**

**Directions:** For each question below you are given four choices. SELECT ANY ONE THAT IS MOST APPROPRIATE ANSWER

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45. Hydrogen bond is most important in compounds containing F, N and O. This is due to their  
A. High I.P. value      B. High E.N. value      C. Smaller size      D. High E.A. value
46. Characteristic smell of bleaching powder is due to free  
A.  $\text{Cl}_2$       B.  $\text{HCl}$       C.  $\text{HClO}$       D.  $\text{CaCl}_2$
47. Choose the correct statement for a solution of  $\text{H}_3\text{PO}_4$  (49gm/500ml).  
A. 1.5m is more concentrated than 1.5M solution.      B. 1.5m is less concentrated than 1.5M solution.  
C. 1.5m is more concentrated than 1.5M former contains large amount of solution.      D. 1.5m and 1.5M solutions having same concentration.
48. During the electrolysis of 18 gm of acidified water hydrogen released at cathode at S.T.P. is  
A. 22.4 liters      B. 18 liters      C. 11.2 liters      D. 1 liter
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49. Which of the following nitrogen fertilizer contains more nitrogen  
A.  $\text{NaNO}_3$       B.  $\text{KNO}_3$       C.  $\text{KH}_4\text{NO}_3$       D. Urea
50. Glycerin boils at  $290^\circ\text{C}$  under normal atmospheric pressure. If the pressure is reduced to 50 mm of Hg, it will boil  
A. Above  $290^\circ\text{C}$       B. Below  $290^\circ\text{C}$       C. At  $290^\circ\text{C}$       D. Absolute zero
51. What is the number of atoms in  $224 \text{ dm}^3$  (litre) of chlorine gas at S.T.P.?  
A. 10      B. 20      C.  $6.0 \times 10^{24}$       D.  $1.2 \times 10^{25}$
52. At STP, which statement is incorrect?  
A. An 11.2 litre container will hold one-half moles of ideal gas.      B. 22.4 litre samples of different gases have same masses.  
C. The gram molecular volume for all gases is about 22400 ml.      D. The density of gases increase with increasing molecular

53. When HCl gas is passed through saturated solution of rock salt the solubility of the salt is  
 A. Increased B. Decreased C. Remains same D. None of these
54. If a metal resists the attack of any kind (physical or chemical) the metal is said to be  
 A. Active B. Passive C. Reactive D. Attractive
55. Compounds of carbon and hydrogen in which the tetra valency of carbon is fully satisfied are called  
 A. Saturated B. Unsaturated C. Magnetic D. Para-magnetic

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56. Which element is used in TV picture tube?  
 A. Na B. K C. Cs D. Ca
57. The addition of a surfactant raises the level of liquid in a glass tube by 1cm. This rise of level is due to the increase of  
 A. Adhesive forces of the liquid molecules B. Cohesive forces of the liquid molecules  
 C. Both adhesive and cohesive forces of the liquid molecules D. viscosity of the liquid
58. Which of the following processes is most likely to be responsible for evolution of heat  
 A. Dissociation B. Sublimation C. Hydration D. None
59. Choose the correct statement  
 A. The shape of an orbit is determined by the quantum number.  
 B. The shape of an orbital is determined by the quantum number  $n$ .  
 C. The greater the value of  $l$ , the larger the sub-level is.  
 D. The lesser the value of  $l$ , the smaller the sub-level is.
60. When Carbon dioxide passes through  $\text{Ca(OH)}_2$  aqueous solution white precipitate is formed. It is  
 A. CaO B.  $\text{CaCO}_3$  C.  $\text{H}_2\text{CO}_3$  D.  $\text{Ca}_2\text{CO}_3$
61. The system in which all the axes are equal in length and at right angle to each other is called



- A. Tetragonal system      B. Cubic system      C. Trigonal system      D. Hexagonal system
62. The energy which is sum of all the energies of all the atoms, molecules or ions within a system is called:  
(a) Internal energy      (b) External energy      (c) Bond energy      (d) Polar energy
63. The experimental relationship between a reaction and rate and the concentration of reaction is called:  
(a) Rate Law      (b) Order Law      (c) Molecularity      (d) Reaction Rate
64. The functional group of ester is:  
(a)  $\text{COOH-}$       (b)  $\text{-COOR}$       (c)  $\text{-CHO}$       (d)  $\text{-COR}$
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65. The amount of heat exchanged when molar quantities of reactants and products are used is called:  
(a) Heat sublimation      (b) Heat of neutralization      (c) Heat of reaction      (d)
66. The general formula of Alkene is:  
(a)  $\text{C}_n\text{H}_{2n+2}$       (b)  $\text{C}_n\text{H}_{2n}$       (c)  $\text{C}_n\text{H}_{2n-2}$       (d) None
67. The electroplating is carried out in:  
(a) Only acidic bath      (b) Only basic bath      (c) Both in acidic and basic bath
68. The electro-negativity of hydrogen is:  
(a) 2.1      (b) 2.5      (c) 1.2      (d) 2.0
69. The substance through which current can flow without change in composition is called:  
(a) Conductor      (b) Insulator      (c) Resistor      (d) Electrolyte
70. An solution having  $\text{pH} = 13$  is:  
(a) Acidic      (b) Basic      (c) Neutral      (d)
71. Shape of  $\text{CH}_4$  molecules is:

- (a) Linear                      (b) Tetrahedral                      (c) Cubic                      (d) Octagonal

72. On passing  $\text{CO}_2$  through Grignard reagent:

- (a) Methanoic acid is formed                      (b) Ethandioic acid is formed  
(c) Propanoic acid is formed                      (d) Glycol is formed

73. The double bonds are present between the atoms of the molecule:

- (a)  $\text{H}_2\text{O}$                       (b)  $\text{CO}_2$                       (c)  $\text{NH}_3$                       (d)  $\text{CH}_3\text{Cl}$

74. Nitrogen dioxide gas is:

- (a) Reddish brown                      (b) Reddish                      (c) Violet                      (d)

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75. The total number of atoms entering into a chemical reaction is equal to the total number of atoms of all the products is called:

- (a) Law of mass action                      (b) Law of multiple proportions                      (c) Law of conservation of mass

76. According to Hund's rule electrons are distributed among subshells to give:

- (a) Minimum number of unpaired electron                      (b) Maximum number of unpaired electron  
(c) Normal number of unpaired electron                      (d) Maximum number of paired electrons

77. Molecular reactions have usually:

- (a) Slow speed                      (b) Fast speed                      (c) Moderate speed                      (d) None

78. A bond formed by the complete transference of one or more electrons from one atom to another is called:

- (a) Electrovalent                      (b) Covalent bond                      (c) Co-ordinate covalent bond                      (d) Polar bond

79. Binary compounds of hydrogen are called:

- (a) Halides                      (b) Hydrides                      (c)                      (d)

80. Dehydrohalogenation of alkyl halide is carried out with:

- (a) Alcoholic KOH      (b) Alcoholic NaOH      (c) AgOH      (d) Aqueous KOH

81. 1 calorie is equal to:

- (a) 393.8 Joules      (b) 4.184 Joules      (c) 285.8 Joule      (d)  $10^{-8}$  Joules

82. Acetic acid is a:

- (a) Weak electrolyte      (b) Strong electrolyte      (c) Non-electrolyte      (d) Basic compound

83. Grignard's reagent react with alkyl halide to form:

- (a) Alkane      (b) Alkene      (c) Alkyne      (d) None

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84. The process in which one S and one P-orbital mix with each other is called:

- (a) SP-hybridization      (b) SP<sup>2</sup>-hybridization      (c) SP<sup>3</sup>-hybridization      (d) None

85. Air pollution is caused by:

- (a) Hydrocarbons      (b) Fluorocarbons      (c) Hydrogen      (d) Dust Particles

86. Isopropyl alcohol on oxidation forms:

- (a) Acetaldehyde      (b) Ether      (c) Acetone      (d) Ethenone

87. Paraffins are also called:

- (a) Alkyne      (b) Alkane      (c) Alkene      (d) Glycides

88. Ligands are:

- (a) Electron pair acceptors      (b) Electron pair donors      (c) Neutral

89. Among sigma bond and  $\pi$  bond:

- (a) Sigma bond is stronger      (b)  $\pi$  bond is stronger      (c) Both are of equal strength

90. The mass of electron is:

- (a)  $9.1 \times 10^{-31}$  kg      (b)  $9.1 \times 10^{-27}$  kg      (c)  $1.6 \times 10^{-19}$  kg      (d) None

91. There will be increase in the bond energy of a covalent molecule because of:

- A) Polarity      B) electro negativity      C) atomic number      D) symmetry

92. If a system at equilibrium is disturbed by some change, the system will shift so as to counteract the effect of the change". This is the statement of

- A) The law of mass action      B) The law of thermodynamics      C) La Chatelier's Principle      D) The law of heat summation

93. The  $D_2O$  is commonly called

- A) Light water      B) Heavy water      C) Ordinary water      D) Water vapour

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94. Duralumin is an alloy of

- A) Iron      B) Copper      C) Cobalt      D) Aluminum

95. Carbon and Silicon form compounds which are

- A) Divalent      B) Trivalent      C) Tetravalent      D) Pentavalent

96. One of the products during electrolysis of NaCl solution is

- A) NaClO      B) NaOH      C)  $NaClO_3$       D) Na

97. Equilibrium constant is constant when

- A) Temperature is constant      B) Pressure is constant      C) Volume is constant      D) None of the above

98. Hydrolysis of ionic hydrides produces:

- (a)  $H_2O_2$       (b)  $O_3$       (c)  $O_2$  gas      (d)  $H_2$  gas

99. A nucleus has an atomic number of 40. What is its atomic number after beta emission?

- (a) 41      (b) 36      (c) 42      (d) 44

**100.**

Which of the following elements metalloid?

- (a) Aluminum (b) Cobalt (c) Sodium (d) Tellurium

**101.** Compared to the first ionisation potential of an atom the second is:

- (a) Smaller (b) The same (c) Negligible (d) Greater

**102.** Iodine deficiency in diet is known to cause:

- (a) Goiter (b) Night blindness (c) Rickets (d) Beri-beri

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**END OF CHEMISTRY SECTION**

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**STOP****ENGLISH :****Directions:**

The following sentences contain problems in grammar, usage, diction (choice of words), and idiom.

**Some sentences are correct.**

No sentence contains more than one error. You will find that the error, if there is one, is underlined and lettered. Assume that all other elements of the sentence are correct and cannot be charged. In choosing answers, follow the requirements of standard written English. If there is an error, select the one underlined

part that must be changed in order to make the sentence correct, and blacken the corresponding space on the answer sheet.

If there is no error, mark answer space E.

103. Aired is one who seems to like Helen better than us, irregardless of how much we try to please him. No error

A B C D E

104. Statistics can be cited to prove than prices this year are lower than last year. No error

A B C D E

105. She angered him beyond measure when she said he walks like his father does, slowly. No error

A B C D E

106. If the loser in the contest turns our to be him, I shall have had hardly no opportunity to speak with him. No error

A B C D

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107. I just cannot leave the book lie on the floor without telling you and her that you had better

A B C D

pick it up immediately. No error

E

108. Because I had scarcely no time to lose, Paula, along with the fourteen other members

A B C

of the committee, was notified of our decision. No error

D E

109. Who shall I blame when it's time for the group and us to make our report, and we

A B C

shall have to report that we re unprepared? No error

D

E

110. My brothers-in-law's storage facilities far exceeds ours. No error

A

B

C

D

E

**DIRECTIONS:** Each of the following sentences is to be rephrased according to the directions that follow it. You should make only those changes that the directions require. Keep the meaning of the revised sentence as close to the meaning of the original sentence as the directions for that sentence permit.

111. Using it wisely, leisure promotes health, efficiency, and happiness.

A. Using it wisely

B. If used wisely

C. Having used it wisely

D. Because it is used wisely

E. Because of usefulness

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112. The scouts were told to take an overnight hike, pitch camp, prepare dinner, and that they should be in bed by 9 PM.

A. To take an overnight hike, pitch camp, prepare dinner, and that they should be in bed by 9 PM.

B. To take an overnights hike to pitch camp, prepare diner and that they should be in bed by 9 PM.

C. To take an overnight hike, pitch camp, prepare diver, and be in bed by 9 PM.

D. To take an overnight hike, pitching camp, preparing dinner and going to bed by 9 p.m.

E. To engage in an overnight hike, pitch camp, prepare dinner, and that they should be in bed by 9 P.M.

113. Her brothers along with her parents insist that she remain in school.

A. insist

B. Insists

C. Are insisting

D. Were insisting

E. Have insisted

114. Most students like to read these kind of books during their time.

- A. These kind of books
- B. These kind of book
- C. This kind of book
- D. This kinds of books
- E. Those kind of books

115. She not only was competent but also friendly in nature.

- A. She not only was competent but also friendly
- B. Not only was she competent but friendly also
- C. She not only was competent but friendly also
- D. She was not only competent but also friendly
- E. She was not only competent but friendly also

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116. In the normal course of events. Saleem will graduate high school and enter college in two years.

- A. Saleem will graduate high school and enter
- B. Saleem will graduate from high school and enter
- C. Saleem will be graduated from high school and enter into
- D. Saleem will be graduated from high school and enter into
- E. Saleem will have graduated high school and enter

117. With the exception of Fraz and I, everyone in the class finished the assignment before the bell rang.

- A. Frank and I everyone in the class finished
- B. Fraz and me, everyone in the class finished
- C. Fraz and me, everyone in the class had finished
- D. Fraz and I, everyone in the class had finished
- E. Fraz and me everyone in the class finished

118. When one eats in this restaurant, you often find that the prices are high and that the food is poorly prepared.

- A. When one eats n this restaurant, you often find
- B. When you eat n this restaurant, one often finds
- C. As you eat in this restaurant, you often find
- D. If you eat in this restaurant, you often find
- E. When one ate in this restaurant, he often found

119. It was decided by us that the emphasis would be placed on the result that might be attained.



- A. It was decided by us that the emphasis would be placed on the results that might be attained.
- B. We decided that the emphasis would be placed on the results that might be attained.
- C. We decided to emphasize the results that might be attained.
- D. We decided to emphasize the results we might attain
- E. It was decided that we would place emphasis on the results that might be attained.

**120.** Completing the physical examination, the tonsils were found to be diseased.

- A. Completing the physical examination, the tonsils were found to be diseased.
- B. Having completed the physical examination the tonsils were found to be diseased.
- C. When the physical examination was completed, the tonsils were found to be diseased.
- D. The physical examination completed, the tonsils were found to be diseased.
- E. The physical examination found that the tonsils were diseased.

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**121.** Today this is a totally different world than we have seen in the last decade,

- A. Than we have seen.
- B. From what we have seen
- C. From what we seen
- D. Than what we seen
- E. Then we have seen

**122.** When one reads the poetry of the seventeenth century, you find a striking contrast between the philosophy of the cavalier poets such as suckling and the attitude of the Metaphysical poets such as Donne.

- A. When one reads the poetry of the seventeenth century, you find
- B. When one read the poetry of the seventeenth century, one finds
- C. When one reads the poetry of the seventeenth century, he finds
- D. If one reads the poetry of the 17<sup>th</sup> century , you find
- E. As you read the poetry of the 17<sup>th</sup> century , one finds

**123.** Anyone interested in the use of computers can learn much if you have access to state \_ of the art microcomputer.

- A. if you have access to
- B. if he was access to

- C. if access is available to  
E. From access to  
D. By access to

124. The reason I came late to class today is because the bus broke down.

- A. I came late to class today is because  
C. I was late to school today is because  
E. I came late to class today is that  
B. why I came late to class today is because  
D. That I was late to school today is because

125. The process by which the community influence the actions of its members is known as social control.

- A. influence the actions of its members  
C. had influenced the actions of its members  
E. will influence the actions of its members  
B. influences the actions of its members  
D. influences the actions of their members

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126. Abandon

- A) Follow  
C) Deliver  
B) Protect  
D) Arrive

127. Abridge

- A) Augment  
C) Encourage  
B) Subdue  
D) Elaborate

128. Abdicate

- A) Seize  
C) Crown  
B) Speak Softly  
D) Obey

129. Absolve

- A) Free  
C) Accuse  
B) Plan  
D) Cheat

130. Acrimonious

- A) Bitter  
C) Plain

- B) Soothing  
D) Intelligent

131. Abet  
A) Aid  
C) Incite

- B) Blockage  
D) Defy

132. Accumulate  
A) Broad cast  
C) Board

- B) Rally  
D) Congress

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### **BIOLOGY**

**Directions:** For each question below you are given four choices. SELECT ANY ONE THAT IS MOST APPROPRIATE ANSWER

**ALL ANSWER MUST BE GIVEN ON THE ANSWER SHEET.**

YOUR ANSWERS MUST BE INDICATED BY LETTERS (A, B, C, D) AND NOT BY THE WORDS THEMSELVES.

133. Sum of all the genes/alleles found in all members of breeding population at a given time is  
A) Genus  
B) Gene  
C) Gene pool  
D) Genome

134. The shrinking of cytoplasm resulting from loss of water by osmosis in a cell placed in a hypertonic solution is  
A) Plasmid  
B) Plasmolysis  
C) Plastid  
D) None

135. The stage of mitosis during which the chromosomes uncoil, the spindles and esters disappear and the nuclear membrane reforms is  
A) Prophase  
B) Telophase  
C) Anaphase  
D) Inter phase

136. All chordates show the
- A) Stiff rod like notochord
  - B) Gill slits, a set of opening in pharyngeal region
  - C) Hollow dorsal central nervous system
  - D) All of above
137. Sulfuric acid mist when inhaled can damage
- A) Lungs
  - B) Heart
  - C) Digestive tract
  - D) All of above

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138. An animal which captures & readily kill live animals for its food is called
- A) Prey
  - B) Predator
  - C) Plasmid
  - D) Transgenic animal
139. The best known solvent is
- A) Ether
  - B) Methyl alcohol
  - C) Water
  - D) Alcohol
140. The consumers are the herbivores that feed directly on green plants are
- A) Secondary consumers
  - B) Primary consumers
  - C) Tertiary consumers
  - D) None
141. Persons have a difficulty is distinguish from red to green is
- A) Color blindness
  - B) Hemophilic
  - C) Thalassemia
  - D) None of above
142. The trait that is controlled by a gene found on the X-chromosome called
- A) Sex-linked trait
  - B) X-linked trait
  - C) Y-linked trait
  - D) All of above
143. The pair of autosomes in human beings are
- A) 22
  - B) 23
  - C) 21
  - D) 24

144. Saliva contains an enzyme which hydrolysis starch & glycogen into maltose  
A) Pepsin  
B) Amylase  
C) Lipase  
D) All of above
145. In herbivore, there is a large & store house of bacteria which breakdown cellulose wall of plant cell is  
A) Intestine  
B) Caecum  
C) Colon  
D) Stomach
146. The small intestine of man divided into  
A) Duodenum, Jejunum and ileum  
B) Duodenum and ileum  
C) Duodenum & Jejunum  
D) Only duodenum

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147. Simple digestive cavity of hydra having a open opening is  
A) Archenterone  
B) Coelenteron  
C) Blestocoel  
D) None
148. Metatherians mammals include  
A) Man and apes  
B) Whole, elephant and horse  
C) Duck bill platypus and spiny anteater  
D) None of all
149. It has been proposed that muscles have been fatigued by the accumulation of  
A) Acetic acid  
B) Lactic acid  
C) Citric acid  
D) Iron
150. The only muscle that causes extension at elbow is the big & powerful is  
A) Biceps brachii  
B) Triceps brachii  
C) Connective tissues  
D) Tendons
151. The enzyme which is used to cuts down the viral DNA is  
A) Coenzyme  
B) Holoenzyme  
C) Restriction enzyme  
D) None of above
152. The endangered species in Pakistan are

- A) Black buck, common leopard & houbara bustard  
B) Crocodile & Asian lion  
C) Fox and Owl  
D) None of above
153. In planaria have a simple tubular excretory system is  
A) Meta nephridium  
B) Protonephridium  
C) Mephrostome  
D) None of above
154. The ions to balance the pH value of filtrate passing through the tubule is  
A) Potassium ions  
B) Na ions  
C) H-ions  
D) Cl ions
155. Membrane bound vacuole is called  
A) Tonoplast  
B) Chromoplast  
C) Leucoplast  
D) None

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156. The structure that is long, cylindrical and may exist as solid bundles in xylem or as bundle caps is  
A) Trachea  
B) Tracheids  
C) Sclereides  
D) None
157. The shedding of exoskeleton periodically in arthropods is called  
A) Ecdysome  
B) Ecdysis  
C) Analysis  
D) None
158. Bone forming cells are called  
A) Osteoblasts  
B) Osteocytes  
C) Osteoclasts  
D) All of above
159. The cranium consists of  
A) 6 bones  
B) 8 bones  
C) 3 bones  
D) 10 bones
160. These filaments twisting around the actin chains are 2-strands of another protein called

- A) Tropomyosin  
C) Actin
161. The region of a myofibril b/w two successive-lines is  
A) Sarcolemma  
C) Sarcoplasm
162. Energy for muscle contraction is provided by  
A) ADP  
C) GTP
163. Cardiac muscles are  
A) Involuntary  
C) Both of above
- B) Myosin  
D) All of above
- B) Sarcomere  
D) All of above
- B) ATP  
D) CTP
- B) Voluntary  
D) None of above

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164. Which of the following is not digitigrades  
A) Man  
C) Bear
165. Many plants take on a yellowish when they fail to form a sufficient chlorophyll, this condition is called  
A) Chlorosis  
C) Both of a & b
166. Leaf growth and fruit growth is initiated by a hormone called  
A) Auxins  
C) Cytokines
167. The electrical potential that exists cross a cell membrane is called  
A) Resting membrane potential  
C) Action potential
168. Gonadotrophic hormones include  
A) FSH & LH
- B) Apes  
D) None of above
- B) Etiolated  
D) None of above
- B) Gibberellins  
D) Abscissic acid
- B) Membrane potential  
D) All of above
- B) GH & ACTH

C) STH

D) MSH

**169.** Diabetes insipidus is produced by the reduction of secretion of

A) Oxytocin

B) ADH

C) ACTH

D) GH

**170.** Graves diseases is produced by

A) Reduced thyroxine

B) Excess thyroxine

C) Medium amount of thyroxine

D) None of above

**171.** The tumors that divide more rapidly & invade more surrounding area is called

A) Binging tumor

B) Malignant tumor

C) Both

D) None

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**172.** The effected individuals having one missing X-chromosome with only 45 chromosomes is called

A) Down's syndrome

B) Turner's syndrome

C) Klinefelter's syndromes

D) None of above

**173.** Different alleles of a gene that are both expressed in a heterozygous condition are called

A) Dominant

B) Recessive

C) Co-dominant

D) Multiple allele

**174.** Free living organisms in the environment that have had a foreign gene stably inserted into them & this gene can be passed on to successive generation called

A) Transgenic animals

B) Gene therapy

C) Envitro fertilization

D) None

**175.** A biotic components include

A) Plants

B) Animals

C) Air, water and soil

D) Herbivores

**176.** All the food chains & food webs begin with a

A) Producers

B) Consumers



C) 2ndary consumer

D) None

**177.** Our principal source of energy is

A) Nuclear energy

B) Solar energy

C) Atomic energy

D) None of above

**178.** Three nucleotide sequence in the TRNA is called

A) Cordon

B) Anti cordon

C) Initial cordon

D) None

**179.** Which gas of the atmosphere behaves like a glass sheet of green house

A) Nitrogen gas

B) H<sub>2</sub> gas

C) Carbon dioxide

D) Phosphorus

**180.** Which of the substance is not harmful or polluted for our environment

A) CO<sub>2</sub>

B) Carbon monoxide

C) Lard compound

D) None

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**181.** Ozone molecule is made up of

A) 1 oxygen molecule

B) 2-oxygen molecule

C) 3-oxygen molecule

D) None

**182.** Total codon for amino acids are

A) 64

B) 63

C) 60

D) 61

**183.** The inter-medial host of Taenia is

A) Pig

B) Man

C) Horse

D) Sheep

**184.** The condition in which blood fails to clot is called

A) Colorblindness

B) Thalacemia

C) Haemophilia

D) None

- 185.** T.H Morgan gave the final proof that gene are located on the  
A) Alleles  
B) Chromosomes  
C) DNA  
D) RNA
- 186.** Presence of a alleles Tt, its phenotype is  
A) Dwarf  
B) Tall  
C) Medium  
D) None
- 187.** The unit of hereditary material that develops a trait is  
A) Chromosome  
B) Genes  
C) Allele  
D) None
- 188.** Which of the following is a yellowish structure secretes a progesterone is  
A) Graffian follicle  
B) Corpus leuteum  
C) Follicle  
D) Oocyte

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- 189.** At the time of birth, the baby is still attached to the maternal uterus through the  
A) Spinal cord  
B) Umbilical cord  
C) Chorion  
D) None
- 190.** In unicellular organisms, mostly reproduction takes place by  
A) Asexual  
B) Sexual  
C) By spores  
D) All of above
- 191.** Which of the following provide the fluid medium to embryo  
A) Allantoise  
B) Chorion  
C) Amnion  
D) None
- 192.** The connection b/w the fetus & mother by  
A) Through connective tissues  
B) By placenta  
C) By the wall of uterus  
D) None of above
- 193.** The inheritance of skin color is a case of polygenic inheritance is controlled by  
A) 6 pairs of genes  
B) 8 pairs of gene  
C) 10 pairs  
D) 4 pairs

- 194.** The excellent example of multiple allele is  
A) ABO blood groups  
B) Thalacemia  
C) Hemophilia  
D) None
- 195.** Larvae of frog is known as  
A) Vegetal pole  
B) Tad pole  
C) Animal pole  
D) None
- 196.** Existing structures are lost, this types of changes are called  
A) Progressive  
B) Retrogressive  
C) Modificational  
D) None
- 197.** Which of the following parasite is also called hook worm  
A) Entamoeba histolytica  
B) Fasciola hepatica  
C) Ancylostoma duodenale  
D) Taenia

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- 198.** If parents have a blood groups A and B, then their children have blood groups  
A) A,B and AB  
B) Only A & B  
C) Only A  
D) O blood group
- 199.** In earthworm, the tubular excretory system is  
A) Metanephridia  
B) Protonephridia  
C) Mesonephridia  
D) None
- 200.** How many types of neurons  
A) 2  
B) 3  
C) 4  
D) 5
- 201.** Which of the following carry pulses towards cell body is  
A) Dendron  
B) Axon  
C) Cell body  
D) Schwann cell
- 202.** Mylinated sheath is made by  
A) Schwann cells  
B) Epithelium

C) Connective tissues

D) None

**203.** Cerebellum is present in

A) For brain

C) Hindbrain

B) Midbrain

D) Spinal cord

**204.** In prokaryotes, the newly synthesized mRNA is released in

A) Nucleus

C) Cytoplasm

B) Mitochondria

D) None

**205.** Mitosis is divided in to

A) Cytokines & karyokines

C) Only karyokines

B) Only cytokines

D) None

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**206.** O-blood groups individuals are called

A) Universal donors

C) Both a & b

B) Universal acceptor

D) None

**207.** A hormone released by parathyroid gland is called

A) Parathormone

C) Growth hormone

B) Thyroxine

D) Oxytocin

**209.** Plant disease may be due to

A. Bacillus thuringiensis

B. Rhizobium species

C. Beneficial insects

D. Aphids

E. None of the above

**210.** Abscisc acid cause

A. Inhibits dormancy

- B. Promotes bud dormancy
- C. Inhibits abscission
- D. All of above
- E. None

**211.** Ethene cause

- A. Promotes bud dormancy
- B. Inhibit fruit ripening
- C. Both a & b
- D. None

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**212.** Parthenogenesis is

- A. Reproduction fo aphids
- B. Sexual reproduction
- C. Asexual reproduction
- D. Both A & C
- E. None

**213.** In human beings body cell the reproduction is

- A. Sexual
- B. Asexual
- C. Both A & B
- D. None

**214.** Red light promotes

- A. Leaf rolling
- B. Hooking of plumule

- C. Inhibit flowering in long day plants
- D. Inhibit flowering in short day plants
- E. None

215. Sexual reproduction cause

- A. More of springs
- B. Fast insurgence
- C. Less rapid increase in number
- D. All of above

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216. Gonorrhoea is caused by

- A. Gram negative bacteria
- B. Bacteria
- C. Treponema pallidum
- D. Both B & C
- E. None

217. In higher plants the growth is limited to

- A. Growing seasons
- B. Growing points
- C. Growing injury
- D. None

218. \_\_\_\_\_ play an important role in primary growth

- A. Interclary meristems
- B. Lateral meri stems
- C. Apical meri stems

D. none

219. \_\_\_\_\_ play important role in leaves production

- A. Apical meristems
- B. Interclary meristem
- C. Literal meristem

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220. Internal factors include

- A. Oxygen
- B. CO<sub>2</sub>
- C. HCl
- D. Indole Acetic Acid
- E. Phosphoric Acid

**END OF BIOLOGY SECTION**

**PLEASE DO NOT TURN THIS PAGE UNTIL YOU ARE INSTRUCTED TO DO SO.**

**STOP**

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