# NUST Past Paper – Engineering

Total Time: 3 Hrs Total Question: 200

1. If V =[2,1,3] and W =[-1,4,0] then[V-2W]=
   a. $\sqrt{76}$
   b. $\sqrt{74}$
   c. $\sqrt{89}$
   d. 0
2. The projection of a = i-2j +k along b =4i -4j +7k is
   a. 19/8
   b. 9/19
   c. 8/19
   d. 19/9
3. 0 is a
   a. A Rational number
   b. An Irrational number
   c. Whole number
   d. A positive integer
4. If u =-1 +2j +4k and v =2i – j + 4k are two adjacent sides of a parallelogram then area of parallelogram is
   a. $\sqrt{290}$
   b. $\sqrt{279}$
   c. $\sqrt{297}$
   d. 0
5. The value of 3j(k + i) =
   a. 3
   b. 4
   c. 6
   d. 0
6. If z = (1, 2), then 1/z =?
   a. 0.2 ,0.4
   b. -0.2 ,0.4
   c. 0.2 ,-0.4
   d. -0.2 ,-0.4

7. a vector of magnitude 5 and perpendicular to a = I + 3j –k and b=3i –j is
   a. $\frac{5}{\sqrt{110}}(-i-3j-10k)$
   b. $\frac{5}{\sqrt{17}}(-i-3j-10k)$
   c. $\frac{5}{\sqrt{110}}(-i+3j-10k)$
   d. $\frac{5}{\sqrt{17}}(-i+3j-10k)$

8. The area enclosed by the triangle ABC whose vertices are A(1,2,-3) B(0,0,0) and c (2,7,4) is
   a. $\sqrt{676}$
   b. $\sqrt{845}$ /2
   c. $\sqrt{184}$
   d. 27

9. [k-I , i-j , j-k] =
   a. 1
   b. -1
   c. 1/2
   d. 0
10. It Q , R. are any sets, then Q – R =
   a. Q ∩ ( $Q-R$)
   b. Q–( $Q \cup R$)
   c. Q–( $Q \cap R$)
   d. Q ∪ ( $Q-R$)
11. The equation| x + 4| = x has solution
   a. X = -2
   b. X = 2
   c. X = -4
   d. X = 4
12. Geometrically, the modulus of a complex number represents its distance from the
   a. Point (1 , 0)
   b. Point (0 , 1)
   c. Point (1 , 1)
   d. Point (0 , 0)
13. Associative law of multiplication
   a. ab = ba
   b. a( bc) = ( ab )c
   c. a( a + b ) = ab +bc
   d. (a + b)c = ac + bc

14. a.a-1 = a-1.a =1 is a
    a. Commutative law of multiplication
    b. Multiplicative identity
    c. Associative law of multiplication
    d. Multiplicative inverse
15. ( a +bi ) – ( c + di ) =
    a. (a + b) = ( c + d)
    b. (a + c) + i( b + d)
    c. (a - c) + i( c - d)
    d. (a - c) + i( b - d)
16. ( a , b) +(-a , b) =
    a. ( 0 , 0 )
    b. ( a , b )
    c. ( -a , -b )
    d. ( 1 , 1 )
17. ( a , 0 ) x( c , 0 ) =
    a. (0 ,ac)
    b. (ac,0)
    c. (0,0)
    d. ( a , c )
18. ( 7 , 9 ) + ( 3 ,-5) =
    a. ( 4 , 4)
    b. (10 ,4)
    c. ( 9 , -5 )
    d. ( 7 , 3 )
19. If z1 =2 + 6i and z2 =3 + 7i, then which expression defines the products of z1 and z2?
    a. 36 + (-32)i
    b. -36 + 32i
    c. 6 + (-11)i
    d. 0, + (-12)i
20. Which element is the additive inverse of (a, b) in complex numbers?
    a. ( a , 0)
    b. ( 0 , b)
    c. ( a , b)
    d. ( -a , -b)
21. The set (Z , t ) forms a group
    a. Forms a group w.r.t addition
    b. Non commutative group w.r.t multiplication
    c. Forms a group w.r.t multiplication
    d. Does not form group

22. Which of the following has the same value as $i^{113}$?
    a. i
    b. -1
    c. –i
    d. 1
23. P: Islamabad is a capital of Pakistan q: Lahore is not a city of Pakistan, the conjunction of p q is
    a. False
    b. True
    c. Not valid
    d. Known
24. A disjunction of two statement p and q is true if
    a. P is false
    b. Both p and q is true
    c. One of P and q is true
    d. Q is false
25. The set of real number R is a subset of
    a. The set of natural Numbers N
    b. The set of inters Z
    c. The set of complex numbers C
    d. The set of even integer E
26. An element 'b' of a set B can be written as
    a. $b \subseteq B$
    b. $b < B$
    c. $b \in B$
    d. $B \in b$
27. The set A is
    a. Improper subset of A
    b. Proper submit of A
    c. Not a subset of A
    d. Not superset of A
28. A set containing only one element is called the
    a. Empty set
    b. Singleton set
    c. Null set
    d. Solution set

29. To each element of a group there correspond how many inverse element
    a. Only one
    b. At least one
    c. More than one
    d. Two
30. The set of students of your class is
    a. Infinite set
    b. Finite set
    c. Empty set
    d. Null set
31. To draw general conclusions from accepted or well-known facts is called:
    a. Induction
    b. Proposition
    c. Deduction
    d. Aristotelian logic
32. The truth value of the proportion is a positive number or 2+2 = 4 is
    a. True
    b. False
    c. Contingency
    d. None
33. The draw general conclusions from a limited number of observation or experiences is called
    a. Proposition
    b. Deduction
    c. Induction
    d. Knowledge
34. A declarative statement which may be3 true or false but not both is called
    a. Proposition
    b. Deduction
    c. Induction
    d. Knowledge
35. Which of the following is not mooned w.r.t addition?
    a. Z
    b. N
    c. W
    d. R
36. DEDUCTIVE LOGIC IN WHICH EVERY STATEMENT IS REGARDED AS TRUE OR FALSE AND THERE IS SCOPE FOR A THIRD OR FOURTH POSSIBILITY IS CALLED
    a. PROPOSITION
    b. DEDUCTION
    c. NON Aristotelian logic
    d. Aristotelian logic

37. A disjunction of two statements p and q is true if
    a. P IS FALSE
    b. Both p and q are false
    c. One of p and q is true
    d. Q is false
38. The identity element of N, w.r.t addition is
    a. 1
    b. 0
    c. 2
    d. None
39. The set of the first element of the ordered pairs forming a relation is called ots:
    a. Relation of A to B
    b. Relation from B to A
    c. Relation in A
    d. Relation in B
40. A subset of B x A is called a
    a. Relation of A to B
    b. Relation from B to A
    c. Relation in A
    d. Relation in B
41. Cos [-150($\pi$/2) =?
    a. 0
    b. 1
    c. -1
    d. $\infty$
42. $45^0$ =?
    a. 3$\pi$/2 radians
    b. 2$\pi$/3 radians
    c. $\pi$/4
    d. 180$\pi$ radians
43. A circular wire of radius 3cm us cut straightened and then bent so as to lie along the circumference of a hoop of radius 24cm.the measure of the angle subs tended at the center of the hope is
    a. $15^0$
    b. $30^0$
    c. $45^0$
    d. $60^0$

44. The area of a sector with a central angle of 0.5 radians in a circular region whose radius is 2m is
    a. $\pi/2$ $m^2$
    b. $\pi/3$ $m^2$
    c. $\pi/6$ $m^2$
    d. $1m^2$
45. The multiplicative inverse of – 1 in the set {-1,1}is:
    a. 1
    b. -1
    c. ±1
    d. 0
46. The values of cos 20+ sec 20 is always
    a. Less than 1
    b. Equal to 1
    c. Greater then 1,but less than 2
    d. Greater than or equal to 2.
47. The maximum value of sin x + Cos x is
    a. 1
    b. 2
    c. $\sqrt{2}$
    d. $1/\sqrt{2}$
48. In a school, there are 150 students. Out of these 80 students enrolled for mathematics class, 50 enrolled for English class, and 60 enrolled for physics class. The student enrolled for English cannot attend any other class, but the students of mathematics and physics can take two courses at a time. Find the number of students who have taken both physics and mathematics.
    a. 40
    b. 30
    c. 50
    d. 20
49. The set { {a, b} } is
    a. Infinite set
    b. Singleton set
    c. Two points set
    d. None
50. Sin 500- sin700 + sin100 is equal to
    a. 1
    b. 2
    c. ½
    d. 2.

51. The graph of a quadratic function is
    a. Circle
    b. Ellipse
    c. Parabola
    d. hexagon
52. The set of complex number forms a group under the binary operation of
    a. Addition
    b. Multiplication
    c. Division
    d. Subtraction
53. The multiplicative inverse of – 1 in the {1,-1} is
    a. 1
    b. -1
    c. ±1
    d. 0
    e. Does not exist
54. The set {1,- 1/,*i* ,*i*}, form a group under
    a. Addition
    b. Multiplication
    c. Subtraction
    d. None
55. The set of all positive even integers is
    a. Not a group
    b. A group w.r.t, subtraction
    c. A group w.r.t, division
    d. A group w.r.t, multiplication
56. The vector quantity in the following
    a. Distance
    b. Impulse
    c. Energy
    d. 1
57. The set (Q,)
    a. Forms a group
    b. Does not room a group
    c. Contains no additive identity
    d. Conations on additive inverse

58. The set (Z, + ) forms a group
    a. Forms a group w.r.t addition
    b. Non commutative group w.r.t multiplication
    c. Forms a group w.r.t Multiplication
    d. Doesn't form a group
59. Total number of subsets that can be formed out of the set{a, b, c}is
    a. 1
    b. 4
    c. 8
    d. 12
60. Additive inverse of – a- b is
    a. A
    b. –a+ b
    c. A-b
    d. A+ b
61. If x = 1/x for x $\in$R then the respect to subtraction is
    a. 0
    b. 1
    c. 2
    d. 4
62. The identity element with respect to subtraction is
    a. 0
    b. 1
    c. ±1
    d. Does not exist
63. Multiplicative inverse of 0 is
    a. 0
    b. 1
    c. ±1
    d. Does not exist
64. Decimal part of irrational number is
    a. Terminating
    b. Repeating only
    c. Neither repeating nor terminating
    d. Repeating and terminating
65. The trigonometric ratio change into co- ratio and vice versa if $\phi$ is added to or subtracted from
    a. Even – multiple of right angle
    b. Odd of $\pi/2$ multiple
    c. Both a and b
    d. None of these

66. In a country, 55% of the male population has houses in cities while 30% have houses both in cities and in villages. Find the percentage of the population that has houses only in villages,
    a. 45
    b. 30
    c. 25
    d. 50
67. If a function f: A→ B is such that fan f=B then f is a/ an?
    a. Into function
    b. Onto function
    c. Bi-jective function
    d. one – one function
68. the set of the first elements of the orders pairs forming a relation is called its
    a. relation in B
    b. range
    c. Domain
    d. Relation in A
69. A function in which the second elements of the order pairs are distinct is called
    a. Onto function
    b. One-one function
    c. Identity function
    d. Inverse function
70. A function whose range is just one element is called
    a. One –one function
    b. Constant function
    c. Onto function
    d. Identity function
71. The graph of a quadratic function is
    a. Circle
    b. Straight line
    c. Parabola
    d. Triangle
72. To each element of a group there corresponds_____ inverse element
    a. Two
    b. One
    c. No
    d. Three
73. The set of integer is
    a. Finite group
    b. A group w.r.t addition
    c. A group w.r.t multiplication
    d. Not a group

74. The set of complex number forms
    a. Commutative group w.r.t addition
    b. Commutative group w.r.t multiplication
    c. Commutative group w.r.t division
    d. Non commutative group w.r.t addition
75. The set R is _____ w.r.t subtraction
    a. Not a group
    b. A group
    c. No conclusion drawn
    d. Non commutative group
76. Power set of x I.e. p(x)_____under the binary operation of union U
    a. Forms a group
    b. Does not form a group
    c. Has no identity element
    d. Infinite set although x is infinite
77. Any point, where f is neither increasing nor decreasing and f'(x) =0 at that point, is called a
    a. Minimum
    b. Maximum
    c. Stationary point
    d. Constant point
78. If A={1,2,3,4,5,6} and gives relation {(1,1),(2,2),(3,3),(4,4),(5,5),(6,6)} is called:
    a. Binary relation
    b. Inverse relation
    c. Range at a relation
    d. Identity relation
79. The transpose of a row matrix is a
    a. Column matrix
    b. Diagonal matrix
    c. Zero matrix
    d. Scalar matrix
80. Which of the following is unary operation:
    a. Square root
    b. Union of sets
    c. Addition
    d. Multiplication
81. Mass defect of an atom refers to
    a. Inaccurate measurement of mass of nucleons
    b. Mass annihilated to produce energy to bind the nucleus
    c. Packing fraction
    d. Difference in number of neutron and protons in the nucleus

82. In alternating current the average value of current in cycle is
    a. 0
    b. Constant
    c. +ive
    d. Max
83. Radioactivity is purely a nuclear phenomenon , and is not affected by
    a. Physical or chemical reaction
    b. Temperature
    c. Pressure
    d. All
84. A radioactive reaction $_{92}U^{238} \rightarrow {}_{82}Pb^{206}$ . How many α and β particles are emitted?
    a. 10α and 6β
    b. 4 proton and 8 neutrons
    c. 6 electron and 8 proton
    d. 8α and 6β
85. The time taken by the entire electron pulse to reach anode , n Geiger Muller tube is
    a. 1 ms
    b. Less than 1$\mu s$
    c. More than 1 $\mu s$
    d. None of these
86. Geiger Muller counter can be used to determine the
    a. Range of ionizing particle
    b. Mass of ionizing particle
    c. Charge of ionizing particle
    d. None
87. In a nuclear reaction, which of the following is conserved?
    a. Atomic number only
    b. Mass number only
    c. Atomic number , mass number and energy
    d. Energy only
88. The half-life (T) and the disintegration constant ( λ) of a radioactive substance are related as
    a. λT =1
    b. λT =0.693
    c. T/λ =0.693
    d. λ/T =0.693

89. Which of the following is true?
    a. Lyman series is a continuous spectrum
    b. Ballmer series is a line spectrum in the ultraviolet
    c. Panchen series is a line spectrum in the infrared
    d. The spectral series formula can be derived from the Ruther ford model of the hydrogen atom
90. Typical source of β- particle is
    a. Radon 222
    b. Cobalt 62
    c. Strontium 94
    d. None
91. The effect of the decrease in pressure with the increase in speed of the fluid in horizontal tube gives that
    a. Torricelli effect
    b. Bernoulli effect
    c. Venture effect
    d. Doppler's effect
92. For better resolution and clear visibility trough microscope we use
    a. Longer wavelength light
    b. Shorter wavelength light
    c. Wavelength has no effect
    d. It depend only on design of microscope not on a light
93. Which of the following processes will result into fission reaction?
    a. $_{92}U^{235}$ is bombard with fast moving neutron
    b. $_{92}U^{235}$ is bombard with thermal neutron
    c. $_{92}U^{238}$ is bombard with slow moving neutron
    d. $_{92}U^{235}$ is being unstable breaks into smaller fragments
94. Which one of the following is possible?
    a. $_{7}N^{14} + _{0}n^{1} \rightarrow _{7}N^{16} + _{1}H^{1}$
    b. $_{16}S^{32} + _{1}H^{1} \rightarrow _{17}Cl^{35} + _{2}He^{4}$
    c. $_{8}O^{16} + _{0}n^{1} \rightarrow _{7}N^{14} + 3\ _{1}H^{1} + 2\ _{-1}\beta^{0}$
    d. $_{1}H^{1} + _{1}H^{1} \rightarrow _{2}He^{4}$
95. Which of the following is example of vector product of two vectors?
    a. Linear momentum;
    b. Angular momentum
    c. Force
    d. Electric flux

96. The radius of second orbit of hydrogen atom is
    a. $0.53A^0$
    b. $2.12A^0$
    c. $3.53A^0$
    d. $4.12\ A^0$
97. Element with atomic number Z >82 are
    a. Stable
    b. Unstable
    c. Small
    d. None
98. The number of neutrons 'N' is equal to
    a. N = A-Z
    b. N = A+Z
    c. N = A x Z
    d. N = ½ A + Z
99. When sound waves move from one medium to other medium the quantity which remains unchanged is
    a. Wavelength
    b. Frequency
    c. Speed
    d. Intensity
100. Rutherford's experiments on scattering of α particles proved that:
    a. Atom is mostly empty
    b. +ive charge is uniformly distributed in the atom
    c. Number of +ive charge is equal to the number of -ive charge
    d. Atoms contains electron
101. Which of the following source give discrete emission spectrum?
    a. Incandescent electric bulb
    b. Sun
    c. Mercury vapor lamp
    d. Candle
102. When a hydrogen atom is raised from the ground state to an excited state
    a. P.E increases and K.E decreases
    b. P.E decreases and K.E increases
    c. Both P.E and K.E increases
    d. Both P.E and K.E decreases
103. The half-life of a radioactive substance is 10 days. This mean that
    a. The substance completely disintegrates in 20 days
    b. The substance completely disintegrates in 40 days
    c. 1/8 parts of the mass if the substance will be left intact at the end of 40 days
    d. 7/8 parts of the mass if the substance disintegrates in 30 days

104. In step up transformer when the alternating voltage increases then the alternating current
   a. Will increase
   b. Will decrease
   c. Will not change
   d. None of the above

105. The transition of the electron takes place from n= 2 orbit to n=1 orbit . which if the following gives the shortest wavelength ?
   a. Hydrogen atom
   b. Deuterium atom
   c. Single ionized helium
   d. Doubly ionized helium

106. A one microfarad capacitor of a TV is subjected to 4000V Potential difference the energy stored in capacitor is
   a. 8j
   b. 16j
   c. $4 \times 10^{-3}$ j
   d. $2 \times 10^{-3}$ j

107. A parallel plate condenser with oil between the plates (dielectric constant of oil k =2) has a capacitance C. if the oil is removed then capacitance of the capacitor becomes
   a. $\sqrt{2}\,c$
   b. 2c
   c. $c/\sqrt{2}$
   d. c/2

108. a metal plate of thickness half the separation between the capacitor plates of capacitance C is inserted the new capacitance is
   a. C
   b. C/2
   c. 0
   d. 2C

109. As the electron in Bohr orbit of hydrogen atom passes from state n =2 to n= 1 the Kinetic energy K and Potential energy U changes as
   a. K two-fold, U also two-fold
   b. K four-fold, U also four-fold
   c. K four fold, U two fold
   d. K two fold , U four fold

110. In Bohr model of hydrogen atom let PE represent PE, and TE the total energy in going to a higher orbit
   a. PE increases ,TE decreases
   b. PE decreases,TE increases
   c. PE increases ,TE increases
   d. PE decreases,TE decreases

111. A photon of x rays of 10.2 eV energy is absorbed by hydrogen atom. This will raise an electron from n=1 orbit to which one of the following orbits?
   a. N =2
   b. n= 3
   c. n =4
   d. n= 5

112. aging process of the human body is slowed by motion at
   a. very slow speed
   b. very high speed
   c. very high speed along a circular path
   d. none of these

113. the amount of energy needed to remove electrons from the metal surface depends upon
   a. work
   b. work function
   c. power
   d. wavelength

114. when scattered x rays photons are observed at $\Theta = 90^0$ , the Compton shift $\Delta\lambda$ equal to
   a. Compton shift
   b. Compton wavelength
   c. Full wavelength
   d. None

115. The transitions of inner shell electrons in heavy atoms give
   a. α rays
   b. β rays
   c. γ rays
   d. x rays

116. the temperature scale which is independent of the nature of the working substance is
   a. Celsius scale
   b. Fahrenheit scale
   c. Centigrade scale
   d. Thermodynamic scale

117. The period of a pendulum is measured to be 3.0 s in the inertial frame of the pendulum find the period by an observer moving at 0.95 C with respect to pendulum
   a. 5.6s
   b. 7.9s
   c. 9.6s
   d. 9.8s

118. A photocell with a constant potential difference of V volt across it illuminated by a point source from a distance of 25 cm. when the source is moved to a distance of 1m. The electrons emitted by the photocell.
   a. Carry ¼th their previous energy.
   b. Are $1/16^{th}$ as numerous as before
   c. Are $1/4^{th}$ as numerous as before
   d. Carry $1/4^{th}$ their pervious momentum

119. The heat engine operating in reverse is called
   a. Electric generator
   b. Refrigerator
   c. Carnot engine
   d. Electric motor

120. Light of certain wave length and intensity ejects photoelectrons from a metal plate. Then this beam is replaced by another beam of smaller wavelength and smaller intensity. As a result:
   a. No change occurs
   b. Emission of photoelectrons stops
   c. K.E of the photoelectrons decreases but the strength of the photoelectric current increases
   d. K.E of the photoelectrons decreases but the strength of the photoelectric current decreases

121. In a nuclear reaction, which of the following is conserved?
   a. Atomic number only
   b. Atomic mass only
   c. Atomic number and mass number and energy
   d. Energy only

122. When a rays pass through strong uniform magnetic field , then they
   a. Do not get deflection at all
   b. get deflected in the direction of the field
   c. get deflected in the direction opposite to the field
   d. get deflected in the direction perpendicular to the field

123. the frequencies of x rays , γ rays and ultra violet rays are respectively a,b, and c. then
   a. a > b, b > c
   b. a < b, b > c
   c. a < b, b < c
   d. a > b, b< c
124. emitter of the transistor has greater concentration of impurity as compared to
   a. base only
   b. collector only
   c. both base and collector
   d. none
125. Two inputs of nand gates are shorted. This gate is equivalent to
   a. or gate
   b. and gate
   c. not gate
   d. xor gate
126. In L.C.R series A.C circuit, the phase angle between current and voltage is
   a. Any angle between 0 and $\pm\frac{\pi}{2}$
   b. $\frac{\pi}{2}$
   c. $\pi$
   d. Any angle between 0 and $\frac{\pi}{2}$
127. The force on electron in electric field of $10^8$ N/C
   a. $1.6 \times 10^{-4}$
   b. $1.6 \times 10^{-8}$
   c. $1.6 \times 10^{-10}$
   d. $1.6 \times 10^{-11}$
128. Cause of heat production in a current carrying conductors is
   a. Collisions of free electrons with one another
   b. High drift speed of free electrons
   c. Collision of free electrons with atoms or ions of conductor
   d. High resistance value
129. A point charge Q is placed at the mid-point of a line joining two charges, 4 q and q. if the net force on charges q is 0, then Q must be equal to
   a. –q
   b. +q
   c. -2q
   d. +4q

130. Find the average speed of oxygen molecule in the air at S.T.P
   a. 591m/s
   b. 461m/s
   c. 396m/s
   d. 372m/s

131. The life time of an ordinary excited state is
   a. $10^{-35}$ sec
   b. $10^{-8}$ sec
   c. $10^{-3}$ sec
   d. 0.1 sec

132. In case of a vibrating pendulum the potential energy is maximum at
   a. Mean position
   b. Extreme position
   c. Both A and B
   d. None

133. With the increase of temperature viscosity.
   a. Increase
   b. Decrease
   c. Remain same
   d. Doubles

134. The unit of angular acceleration is
   a. Radian
   b. Radian per second
   c. Radian per second$^2$
   d. None

135. A body moves a distance of 10 m along a straight line under the action of a force of 5 newton if the work done is 25 joules, the angle which the force takes with the direction of motion of the body is
   a. $0^0$
   b. $30^0$
   c. $60^0$
   d. $90^0$

136. The horizontal range of a projectile, at a certain place, depends upon:
   a. The mass of the projectile
   b. The velocity of the projection
   c. The angle of the projection
   d. The angle and as well as velocity of the projection

137. The dot product of two vectors is negative is
   a. They are parallel vectors
   b. They are perpendicular vectors
   c. They are anti-parallel vectors
   d. They are negative vectors

138. From the following pairs, choose the pair that does not have identical dimensions
   a. Angular momentum and Planck constant
   b. Moment of inertia and moment of force
   c. Work and torque
   d. Impulse and momentum

139. Resistive forces are:
   a. Non conservative
   b. Conservative
   c. Both A and B
   d. None

140. Si unit of the intensity of wave is
   a. $jm^{-2}\,s^{-2}$
   b. $jm^{-1}\,s^{-1}$
   c. $wm^{-2}$
   d. $jm^{-2}$

141. the branch of chemistry which convert the chemical energy into electrical energy and electrical energy into chemical energy
   a. thermochemistry
   b. electrochemistry
   c. bio chemistry
   d. none

142. electrolytes have the ability to pass electricity because they posses
   a. free electrons
   b. fused electrolyte
   c. charged ions
   d. none

143. an organic compound X ( molecular formula of $C_6H_7O_2N$) has six atom in a ring system two double bonds and also a nitro group as substituents
   a. heterocyclic
   b. hemicyclic and aromatic
   c. aromatic but not hemicyclic
   d. hemicyclic but not aromatic

144. Which one of the following is not a pollution?
   a. $CO_2$
   b. $NO_2$
   c. CO
   d. $SO_2$
145. Ozone hole refers to
   a. Hole in ozone layers
   b. Reduction in thickness of ozone layer in stratosphere
   c. Reduction of thickness of ozone in troposphere
   d. Increase concentration of ozone
146. Which of the following is not present in RNA?
   a. Uracil
   b. Thymine
   c. Ribose
   d. Phosphate
147. In fructose the possible optical isomers are
   a. 12
   b. 8
   c. 16
   d. 4
148. Straight chain hydrocarbons are
   a. In which atoms of C are in a series
   b. Not in a series
   c. In which each carbon is attached at least with three other carbon atom
   d. None
149. In Friedal-craft's alkylation besides $AlCl_3$ the other reactants are
   a. $C_6H_6 + NH_3$
   b. $C_6H_6 + CH_4$
   c. $C_6H_6 + CH_3Cl$
   d. $C_6H_6 + CH_3COCl$
150. Benzene is obtained from benzene sulphuric acid by treating with
   a. HCL
   b. NaOH
   c. $H_2O$
   d. $NaHCO_3$
151. Limestone is not used in which of the following manufacturing processes?
   a. Phosphorus from phosphorite
   b. Ordinary(soda lime) glass
   c. Iron from hematite
   d. Solvay process of sodium carbonate

152. Which one of the following allotropic form of carbon is isomorphous with crystalline silicon?
   a. Graphic
   b. Coal
   c. Coke
   d. Diamond
153. Redox chemical reaction equation can be balanced by
   a. Oxidation no method
   b. Ion electron method
   c. Both
   d. None
154. The elements with atomic numbers 9,17,35,53,85 and all
   a. Noble gases
   b. Halogens
   c. Heavy metals
   d. Light metals
155. The conductivity of strong electrolyte
   a. Increases on dilution slightly
   b. Does not change on dilution
   c. Decreases on dilution
   d. Depends on density of electrolyte itself
156. Metals will displace another metal from the solution of its salt if
   a. It lies above in electrochemical series
   b. It lies below in electrochemical series
   c. Cannot replace
   d. None
157. Calculate the percentage by weight of NaCl, if 2.0 g of NaCl us dissolved in 20g of water
   a. 11.2%
   b. 9.09%
   c. 13.1%
   d. 14.25%
158. Which of them are coinage metals
   a. Cu, Pb ,Ni
   b. Mn , Cr, Fe
   c. Cu ,Ag ,Au
   d. None

159. Which of the following is a buffer solution?
   a. Brine
   b. Blood
   c. Glue
   d. Solution of $CuSO_4$

160. Which of the following statement regarding catalyst is not true?
   a. A catalyst remains unchanged in composition and quantity at the end of the reaction
   b. A catalysts can initiate a reaction
   c. A catalyst does not alter the equilibrium in a reversible reaction
   d. Catalysts are sometimes very specific respect of reaction

161. Free energy change for a reversible process is
   a. >0
   b. <0
   c. Equal to 0
   d. Unpredictable

162. What would be the heat released when an aqueous solution containing 0.5 mole of $HNO_3$ is mixed with 0.3 mole of $OH^-$ (enthalpy of neutralization is -57.1 kj)
   a. 28.5 kj
   b. 17.1 kj
   c. 45.7 kj
   d. 1.7 kj

163. Lateral overlapping expected
   a. $O^-$ bond
   b. $\overline{\Lambda}$-bonds
   c. Ionic bond
   d. Metallic bond

164. Flourine molecule is formed by
   a. The axial p-p overlap
   b. The sidewise p-p overlap
   c. The axial s-p overlap
   d. The overlap of two $sp^2$ hybird orbital

165. In $BrF_3$ molecule, the lone pairs occupy equatorial positions to minimize
   a. Lone pair – lone pair repulsion
   b. Lone pair –bond pair repulsion
   c. Bond pair –bond pair repulsion
   d. Lone pair –lone pair repulsion and lone pair –bond pair repulsion

166. Rutherford's experiment led to the discovery of
   a. Nucleus
   b. Electron
   c. Proton
   d. A-particle

167. The total number of orbitals ina shell with principal quantum number 'n' us
   a. 2n
   b. $2n^2$
   c. $n^2$
   d. n+1
168. Which is not true with respect to cathode rays?
   a. A stream of electron
   b. Charged particles
   c. Move with speed as that of light
   d. Can be deflected by magnetic fields
169. The ability to lose electron in electrochemical series
   a. Increase from top to bottom
   b. Decrease from top to bottom
   c. No effect
   d. None of these
170. What is the concentration of nitrate ions? If equal volumes of 0.1M $AgnO_3$ and 0.1 M NaCl are mixed together?
   a. 0.1M
   b. 0.2M
   c. 0.05M
   d. 0.25M
171. If the applicant for a new IT job in US ___ more on the interview preparation. The result of their efforts would have been quite different
   a. Have focused
   b. Had focused
   c. Focused
   d. Were focused
172. If _____the match, I will go to Lahore to meet the sports board chairman.
   a. I will win
   b. I win
   c. I shall win
   d. I wins
173. If ____your jobs what would you do?
   a. You had lost
   b. you have lost
   c. You loss
   d. you lost

174. If I __ there, I would make a speech.
   a. Had been
   b. Have been
   c. Were
   d. Was

175. Unless a student _ _____with the collage regulations, he can be removed from the collage.
   a. Will comply
   b. Had complied
   c. Complies
   d. Complied

The public distribution system, which provides food at low prices, is subject if vital concern. There is a growing realization that though Pakistan has enough food to feed its masses three square meals a days, the monster of s starvation and food insecurity continues to haunt the poor in our country.

Increasing the purchasing power of the poor through providing productive employment leading to rising income, and thus good standard of living is the ultimate objective of public policy. However, till then, there is a need to provide assured supply of food through a restructured more efficient and decentralized public distribution system (PDS).

Although the PDS is extensive- it is one of the largest such systems in the world - it has yet to reach the rural poor and the far off places.it remains an urban phenomenon, with the majority of the rural poor still out of its reach due to lack of economic and physical access. The poorest in the cities and the migrants are left out, for they generally do not possess ration cards. The allocation of PDS supplies in big cities is larger than in rural areas. In view of such deficiencies in the system, the PDS urgently needs to be steam lined. In addition, considering the large food grains production combined with food subsidy on one hand and the continuing slow starvation and dismal poverty of the rural population on the other, there is strong case for making PDS target group oriented

The growing salaried class is provided job security, regular income, and %age insulation against inflation. These gains of development have not percolated down to the vast majority of our working population. If one compares only dearness allowance to the employees in public and private sector and looks at its growth in past few years. The rising food subsidy is insignificant to the point of in equality. The food subsidy is a kind of D.A to the poor, the self-employed and those in the organized sector of economy. However, what is most unfortunate is that out of the large budget of the so-called food subsidy, the major part of it is administrative cost and wastages. A small portion of the above budget goes to real consumer and even lesser portion to the poor who are in real need.

It is true that subsidies should not become a permanent feature, except for the destitute, disabled widows and the old. It is also true that subsidies often create a psychology of dependence and hence is habit-

forming, killing the general initiative of the people. By making PDS target group oriented, not only the poorest and neediest would be reached without additional cost, but it will actually cut overall costs incurred on large cities and for better off localities. When the food and food subsidy are limited the rural and urban poor should have the priority in the PDS supplies. The PDS should be closely linked with PDS should be closely linked with programs of employment generation and nutrition improvement.

176. What according to the passage is the main concern about the PDS?
   a. It has not been able to develop confidence in the people at large
   b. It has not been able to utilize the entire food grains stock available
   c. It has effectively channelized the food grains to all sectors.
   d. It has not been able to provide sufficient food to the poorer section of the society

177. What should be an appropriate step to make the PDS effective?
   a. To Make it target group oriented
   b. To increase the amount of food grains per ration card
   c. To decrease the allotment of food grains to urban sector
   d. To reduce administrative cost

178. Which of the following, according to the passage, is compared with dearness allowance?
   a. Food for work program
   b. Unemployment allowance
   c. Food subsidy
   d. Procurement price of food grains

179. Food subsidy leads to which of the following?
   a. Sense of insecurity
   b. Increased dependence
   c. Shortage of food grains
   d. Decrease in food grains production

180. What according to the passage, would be the outcome of making the would PDS target Group Oriented
   a. It will abolish the imbalance of urban and rural sector
   b. It will remove poverty.
   c. It will give food to the poorest without additional cost.
   d. It will motivate the target group population to work more.

181. Knife : cut :: (analogy)
   a. Winter : summer
   b. Sword : sharp
   c. Run : Fast
   d. Drill : Hole

182. Fish : trout :: (analogy)
   a. Bird : aviary
   b. Ocean : wave
   c. Antenna : insect
   d. Mammal : cow

183. Gill : fin ::(analogy)
   a. Cockroach : antenna
   b. Instrument : pencil
   c. Hard disk : keyboard
   d. Bread : butter

184. Fish : school:: (analogy)
   a. Puppy : dog
   b. Novel : story
   c. Cocks : pride
   d. Ear : nose

185. Counselor : advice (analogy)
   a. Artist : musician
   b. Patron :support
   c. Honesty : charity
   d. Bank :banker

186. Wane (synonym)
   a. Decline
   b. Tried
   c. Dead
   d. Shine

187. Baptize (synonym)
   a. Christen
   b. Holy
   c. Dehumanize
   d. Something that had been ostracized

188. Indeterminate (antonym)
   a. Calculated
   b. Conclusive
   c. Extravagant
   d. Astonished

189. Foible (antonym)
   a. Feasible
   b. gull
   c. Luxurious
   d. Forte

190. Attract (antonym)
   a. Progress
   b. Circumnutates
   c. Magnetic
   d. Repel

191. Who is current chairman of ICC?
   a. Percy sonn
   b. David Morgan
   c. Srinivasan
   d. Sharad pawar

192. Name of the country whose court has sentenced 30 people death over heroin smuggling in what is said to be the largest such trail ever held in the country?
   a. Brazil
   b. Korea
   c. France
   d. Vietnam

193. Who is appointed as president of national bank of Pakistan by the government
   a. Syed ahmad Iqbal ashraf
   b. Waqar qureshi
   c. Jamal din
   d. Akhtar Hussain

194. Which country declared a state of emergency in her capital and surrounding areas to take protects aimed at overthrowing the government?
   a. Austria
   b. China
   c. Croatia
   d. Thailand

195. When Pakistan and Saudi Arabian signed hajj agreement at hajj ministry of the kingdom of Saudi Arabia?
   a. 16/1/2014
   b. 22/1/2014
   c. 18/1/2014
   d. 26/1/2014

196. Who was awarded with Ulysses award 2013 for the lifetime achievement by UNWTO for promoting sustainable tourism?
   a. Dr. Tajveer singh
   b. Richard quest
   c. Dr. Gurbaksh
   d. Aleni shiror

197. Which country allowed the Sikhs to wear turban while serving in military?
   a. UK
   b. USA
   c. France
   d. Germany

198. Duty: Memoirs of a secretary at war is written by _____.
   a. Rober gates
   b. Michal Johnson
   c. Hector fanky
   d. Timber McCollum

199. Who won the Australian Open Men's single titles on 26th January 2014?
   a. Rafael Nadal
   b. Roger Feferer
   c. Andy Murray
   d. Stanislaus Waurika

200. Which country has won the female gold in match played in lusofonia games 2014?
   a. Angola
   b. Mozambique
   c. Brazil
   d. India