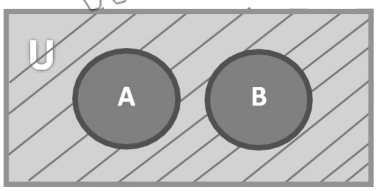
NUST Past Paper – Computer Sciences

Total Time: 3 Hrs Total Question: 200

1. If x=9 is a chord of contact of the hyperbola $x^2 - y^2 = 9$ then the equation of the tangent at one of the points of contact is
   a. $X + \sqrt{3y} + 2 = 0$
   b. $3X - 2\sqrt{2y} - 3 = 0$
   c. $3X - \sqrt{2y} + 6 = 0$
   d. X - + 2 = 0
2. The range of the function cos 1/3x is
   a. [-1,1]
   b. [-1/3,1/3]
   c. [-3,3]
   d. None
3. The set of all real number between 1 and 2 , what its set builder notation
   a. $\{ x \mid x \in R \ A \mid < x < 2 \ \}$
   b. $\{ x \mid x \in R \ A \mid \leq x \leq 2 \ \}$
   c. $\{ x \mid x \in R \ A \mid > x > 2 \ \}$
   d. $\{ x \mid x \in R \ A \mid \geq x \geq 2 \ \}$
4. A circle of radius 4, drawn on a chord of the parabola $y^2 = 8x$ as diameter, touches the axis of the parabola, then the slope of the chord is
   a. ½
   b. ¾
   c. 1
   d. 2
5. If the circle $x^2 + y^2 + 4x - 6y + c = 0$ bisects the circumference of the circle $y^2 + y^2 - 6y\ 4y - 12 = 0$, then C =
   a. 16
   b. 24
   c. -42
   d. -62
6. (a ,0) and (b,0) are centers of two circles belonging to a co-axial system of which y-axis . if; then radius of one of the circles is 'r' . then the radius of the other circle is
   a. $(r^2 + b^2 + a^2)^{1/2}$
   b. $(r^2 + b^2 - a^2)^{1/2}$
   c. $(r^2 + b^2 - a^2)^{1/3}$
   d. $(r^2 + b^2 + a^2)^{1/3}$

7. If the length of the tangent form (h , k) to the circle $x^2+y^2=16$ is twice the length of the tangent from the same point to the circle $X^2+y^2+2X+2y=0$, then
   a. $h^2+k^2+4h+4k+16=0$
   b. $h^2+k^2+3h+3k=0$
   c. $3h^2+3k^2+8h+8k+16=0$
   d. $3h^2+3k^2+4h+4k+16=0$
8. $\{ x \mid x \in Q \wedge 0 \leq x \leq 1 \}$
   a. Finite set
   b. Infinite set
   c. Empty set
   d. Φ
9. The circle passing through (1,-2) and touching the axis of the x at (3,0) also passes through the point
   a. (2, -5)
   b. (5, -2)
   c. (-2, 5)
   d. (-5 ,2)
10. ABCD is a trapezium such that AB and CD are parallel and BC ⊥ CD. If $\angle ADB = \theta$, BC = p CD = q, then AB is equal to
   a. $p^2+q^2\cos\theta/p\cos\theta+q\sin\theta$
   b. $p^2+q^2/p^2\cos\theta+q^2\sin\theta$
   c. $p^2+q^2\sin\theta/(p\cos\theta+q\sin\theta)^2$
   d. $p^2+q^2\sin\theta/p\cos\theta+q\sin\theta$
11. The shaded region of the event diagram.



Is represented by?

   a. A'
   b. B'
   c. A-B
   d. B-A
12. All the students of a class performed poorly in mathematics. The teacher decided to give a grace marks of 10 to each of the students. Which of the following statistical measures will not change even after the grace marks were given?
   a. Median]

b. Mole
c. Variance
d. Mean

13. If x,y,z are in A.P. and $\tan^{-1}x$, $\tan^{-1}y$,$\tan^{-1}z$ are also in A.P. then
    a. 2x=3y=6z
    b. 6x=3y=2z
    c. 6x=4y=3z
    d. X=y=z
14. If $\int f(x)dx = \Psi(x), then \int x^5 f(x^3)$dx is equal to
    a. $\frac{1}{3}x^3\psi(x^3)$-3$\int x^3\psi(x^3)dx + c$
    b. $\frac{1}{3}x^3\psi(x^3)$-$\int x^2\psi(x^3)dx + c$
    c. $\frac{1}{3}[\,x^3\psi(x^3)$-$\int x^3\psi(x^3)dx] + c$
    d. $\frac{1}{3}[\,x^3\psi(x^3)$-$\int x^2\psi(x^3)dx] + c$
15. The equation of the circle passing through the foci of the ellipse $x^2/16 + y^2/9 = 1$, and having center at (0,3) is
    a. $X^2 + Y^2 - 6y + 7 = 0$
    b. $X^2 + Y^2 - 6y - 5 = 0$
    c. $X^2 + Y^2 - 6y + 5 = 0$
    d. $X^2 + Y^2 - 6y - 7 = 0$
16. The x-coordinate of the in c enter of the triangle that has the coordinates of mid points of its sides as(0,1)(1,1) and(1,0)
    a. $2-\sqrt{2}$
    b. $1+\sqrt{2}$
    c. $1-\sqrt{2}$
    d. $2+\sqrt{2}$
17. Intercepts on x axis is made by tangents to the curve $y = \int_0^x |t|dt$, $x \in R$, which are parallel to line y =2x , are equal to
    a. ± 2
    b. ± 3
    c. ± 4
    d. ± 1
18. The sum of first 20 team of sequence 0.7,0.77,0.777,..... is
    a. $7/9(99-10^{-20})$
    b. $7/81(179+10^{-20})$
    c. $7/9(99+10^{-20})$
    d. $7/81(179-10^{-20})$
19. Consider statement -1: $(p \wedge q) \wedge (-p \wedge q)$ is a fallcy.
    Statement-2: $(p \rightarrow q) \leftrightarrow (\sim q \rightarrow \sim p)$ is a tautology.

a. Statement 1 is true and statement 2 is true. Statement 2 is not a correct explanation for statement 1
b. Statement 1 is true and statement 2 is false.
c. Statement 1 is false and statement 2 is true.
d. Statement 1 is true and statement 2 is true. Statement 2 is a correct explanation for statement 1

20. The area (in square units) bounded by the curves $y=\sqrt{x}$, $2y - x + 3 = 0$ x-axis, and lying in the first quadrant is
    a. 36
    b. 18
    c. 27/4
    d. 9
21. The expression [tanA/1-cotA]+[cotA/1- tanA] can be written as
    a. secA cosec A+1
    b. tanA + cotA
    c. secA +cosecA
    d. sinA +cosA+1
22. The real number k for which the equation, $2x^3 + 3x + k = 0$ has two distinct real roots in [0, 1].
    a. Lies between 2 and 3
    b. Lies between -1 and 0
    c. Does not exist
    d. Lies between 1 and 2
23. Lim $x \to 0$ (i-cos2x)(3+cosx)/xtan4x is equal to
    a. ½
    b. 1
    c. 2
    d. -1/4
24. If $x \in B' = u - B'$ then ,
    a. $X \in B$ and $X \in U$
    b. $X \notin B$ and $X \in U$
    c. $X \in B$ and $X \notin U$
    d. $X \notin B$ and $X \notin U$
25. At present, a firm manufacturing 2000 items, it is estimated that the rate of change of production P w.r.t additional number of workers x is given by $dP/dx = 100 - 12\sqrt{x}$. If the firm employs 25 more workers, then the new level of production of items is
    a. 3000
    b. 3500
    c. 4500
    d. 2500
26. If p = matric $\begin{matrix} 1 & a & 3 \\ 1 & 3 & 3 \\ 2 & 4 & 4 \end{matrix}$ is the adjoint of a 3 x3 matric A and $|A|=4$ then α is equal to

a. 11
b. 2
c. 0
d. 4

27. The number of values of k , for which the system of equations
(K+1)x +8y=4k
Kx+(k+3)y =3 k-I has no solution
a. 1
b. 2
c. 3
d. Infinite

28. If y =sec(tan^{-1}x),then dy/dx at x =1 is equal to

a. ½
b. 1
c. $\sqrt{2}$
d. $1/\sqrt{2}$

29. If the lines x-2/1=y-3/1=z-4/-k and x-1/k=y-4/2 =z-5/1 are coplanar, then k can have
a. Exactly one value
b. Exactly two value
c. Exactly three value
d. Any value

30. L U M =$L \cap M$ then L is equal to
a. M
b. L
c. Φ
d. M'

31. If the vector AB= 3i + 4k and AC = 5i – 2j +4k are the sides of a triangle ABC, then the length of the median through A is
a. $\sqrt{72}$
b. $\sqrt{33}$
c. $\sqrt{45}$
d. $\sqrt{18}$

32. A multiple choice examination has 5 questions. Each question has three alternative answers of which exactly one is correct. The probability that a student will get 4 or more correct answers just by guessing is
a. $13/3^5$
b. $11/3^5$

c. $10/3^5$
d. $17/3^5$

33. If z is a complex number of unit modulus and argument Θ, then arg(1+z/1+ $\bar{z}$) equals
    a. π/2 – Θ
    b. Θ
    c. π – Θ
    d. – Θ
34. If the equation x^2 +2x +3 =0 and ax^2 + bx + c =0 a,b,c, Є R, have a common root , then a:b:c is
    a. 3:2:1
    b. 1:3:2
    c. 3:1:2
    d. 1:2:3
35. Distance between two parallel planes 2x + y + 2z = * and 4x +2y +4Z+5 =0 is
    a. 5/2
    b. 7/2
    c. 9/2
    d. 3/2
36. If X ЄY are two set and n(x) =18, n(y)=24 n=(X U Y)=40 then n=($X \cap Y$) =
    a. 3
    b. 4
    c. 2
    d. 6
37. The area of the triangle formed by the tangent at (3,4) to the circle X^2 +Y^2 25 and coordinates axes is
    a. (24/25) sq unit
    b. 0 sq unit
    c. (625/24) sq unit
    d. -(24/25) sq unit
38. Which of the following function has period 2 π?
    a. Y=sin(2 πt + π/3) + 2sin(3 πt + π/4) +3sin5πt
    b. Y = sin(π/3)t +sin (π/4)t
    c. Y = sin t + cos 2t
    d. None of these
39. Two bodies of masses m and 4m are moving with equal momentum. The ratio of their K.E is
    a. 1:4
    b. 4:1
    c. 1:1
    d. 1:2
40. The line y; = mx+1 is a tangent to the parabola y^2 =4x, if ;
    a. M=1
    b. M=2

c. M=4
d. M=3

41. Let D be the middle point of the side BC of a triangle ABC. If the triangle ADC is equilateral, then $a^2 : b^2 : c^2$ is equal to
    a. 1:4:3
    b. 4:1:3
    c. 4:3:1
    d. 3:4:1
42. It A and B are any two sets and A', B' are their complements relative to the universal set U, then (A ∩B) and (A ⊂B)'=?
    a. (A' ∩B')
    b. (A'UB)
    c. (A ∩B')
    d. (A' U B')
43. The projection of the vector I – 2j+k on the vector 4i -4j +7k is equal to
    a. 19/9
    b. 9/19
    c. $\frac{\sqrt{3}}{19}$
    d. 19/ $\sqrt{3}$
44. Let a =2i – j +k , b= i+2j - k and ci +j+2k be three vectors .A vector in the plane of b and c whose projection a is of magnitude $\frac{\sqrt{2}}{3}$ *is*
    a. 2i +3j+3k
    b. 2i +3j-3k
    c. 2i +j+5k
    d. 2i -j+5k
45. The value of k for which the vectors a =1i-1j and b 2i +kj are collinear is
    a. 2
    b. ½
    c. 1/3
    d. 3
46. The area of a parallelogram whose adjacent sides are determined by the vectors a = 1i +2j +3k and b= -3i-2j +k is equal to
    a. $8\sqrt{5}$
    b. $9\sqrt{5}$
    c. $6\sqrt{5}$
    d. $17\sqrt{15}$
47. A uniform ladder rests in limiting equilibrium with its lower end on a rough horizontal plane and its upper end against a smooth vertical wall Θ is an angle of inclination of the ladder to the vertical wall and μ is the coefficient of friction, then tan Θ is equal to

a. μ
b. 2μ
c. $3\mu/2$
d. $\mu + 1$

48. The value of $\lim x \to \infty (3x-4/3x+2)^{x+1/3}$ is equal to
a. $e^{-1/3}$
b. $e^{-2/3}$
c. e^{-1}
d. e^{-2}

49. if $f(x) = (x+1)^{\cot x}$ be continuous at x= 0, then f(0) is equal to
a. 0
b. –e
c. e
d. none of these

50. I $y = (\cos x^2)^2$,then dy/dx is equal to
a. $-4x \sin 2x^2$
b. $-x \sin 2x^2$
c. $-2x \sin 2x^2$
d. $-x \cos 2x^2$

51. The value of the derivative of $|x-1|+|x-3|$ at x =2 is :
a. 2
b. 1
c. 0
d. -2

52. The derivative of $\sin^{-1}(2x/1+x^2)$ with respect to $\cos^{-1}(1-x^2/1+x^2)$ is equal to
a. 1
b. -1
c. 2
d. None

53. The minimum value of function $f(X) = 3x^4 - 8x^3 + 12x^2 - 48x + 25$ on [0,3] is equal to
a. 25
b. -39
c. -25
d. 39

54. ${}_1\int^2 e^x[1/x - 1/x^2]\,dx$ is equal to
a. e((e/2)-1)
b. e(e-1)
c. 0
d. None

55. The value of the $\tan^{-1}(\frac{1}{2}) + \tan^{-1}(1/3)$ is
a. 0

b. π/3
c. n/6
d. π/4

56. if $^{12}p_r$ = 1320, then r is equal to
    a. 5
    b. 4
    c. 3
    d. 2

57. A particle is projected vertically upward takes t1 second to reach a height h. If t2 second is the subsequent time to reach the ground, then the maximum height attained is
    a. $(1/2)g(t1 + t2)^2$
    b. $(1/4)g(t1 + t2)^2$
    c. $(1/8)g(t1 + t2)^2$
    d. None

58. AU(B∩C) = (AUB) ∩ (AUC)
    a. Distributivity of intersection over union
    b. Distributivity of union over intersection
    c. Associativity of intersection over union
    d. Associativity of union over intersection

59. The eccentricity of the ellipse $9x^2 + 5y^2 - 30y = 0$ is equal to
    a. 1/3
    b. 2/3
    c. ¾
    d. None

60. The radius of the circumcircle of an isosceles triangle PQR is equal to PQ (=PR), then the angle P is
    a. π/6
    b. π/3
    c. π/2
    d. 2π/3

61. If A={x,y}, then the power set of A is :
    a. $\{x^x, y^y\}$
    b. {ø, x,y}
    c. { ø , {x}, {2y}}
    d. {f, {x},{y},{x,y}}

62. G= {e,a,b,c} is an abelian group with 'e' as identity element. The order of the other elements are
    a. 2,2,2
    b. 3,3,3
    c. 2,2,4
    d. 2,3,4

63. The solution of the differential equation $(x^4\, dy/dx)x^3y + \text{cosec}(xy) = 0$ is equal to
    a. $2\cos(xy) + x^{-2} + c$
    b. $2\cos(xy) + y^{-2} + c$
    c. $2\sin(xy) + x^{-2} + c$
    d. $2\sin(xy) + y^{-2} + c$

64. Forces of magnitudes 3 and 2 unit acting in the directions 5i +3j+4k and 3i +4j -5k respectively act on a particle which is displaced from the points (1,-1,-1) to (3,3,1). The work done by the forces is equal to :
    a. $80\sqrt{2}unit$
    b. $40\sqrt{2}unit$
    c. $(57/5)\sqrt{2}unit$
    d. $8\sqrt{2}unit$

65. The rate of increases of bacteria in a certain culture is proportional to the number present. If it is double in 5h.then in 25 h. its number would be
    a. 8 time the original
    b. 16 time the original
    c. 32 time the original
    d. 64 time the original

66. If a magnitude 50 is collinear with the vector b=6i -8j-(15k/2), and makes an acute angle with the positive direction of z axis, then the vector is equal to
    a. 24i – 32 j + 30k
    b. -24i + 32j + 30k
    c. 16i - 16j -15k
    d. -12i + 16j - 30k

67. The value of the determinant $\begin{vmatrix} 1 & x & y+z \\ 1 & y & z+x \\ 1 & z & x+y \end{vmatrix}$ is equal to
    a. X
    b. Y
    c. Z
    d. 0

68. If a man and his wife enter in a bus, in which five seats are vacant, then the number of different ways in which they can be seated is
    a. 2
    b. 5
    c. 20
    d. 40

69. The differential equation of the family of curves for which the length of the normal is equal to a constant k, is given by:
    a. $y^2\, dy/dx = K^2 - y^2$

b. $(y\ dy/dx)^2 = K^2 - y^2$
c. $Y(dy/dx)^2 = K^2 + y^2$
d. $(Y\ dy/dx)^2 = K^2 + y^2$

70. If ω is a complex cube root of unity, then the value of $\omega^{99} + \omega^{100} + \omega^{101}$ is
a. 1
b. -1
c. 3
d. 0

71. The root of the equation $(q-r)x^2 + (r-p)x + (p-q) = 0$ are
a. (r-p/q-r') x ½
b. (p-q/q-r') x 1
c. (q-r/p-q') x 1
d. (r-p/ p-q') x ½

72. The value of $\sin 10^0 + \sin 20^0 + \sin 30^0 + \ldots\ldots\ldots\ldots + \sin 360^0$ is equal t o
a. 0
b. 1
c. $\sqrt{3}$
d. 2

73. The mean of observations $x_1, x_2, \ldots\ldots\ldots x_n$ is $\bar{x}$, then $(x_1 - \bar{x})$, $(x_2 - \bar{x})$,... .....$(x_n - \bar{x})$ is equal to
a. $(n-1)\bar{x}$
b. $n\bar{x}$
c. 0
d. None

74. If $\sin^{-1}(2a/1+a^2) + \sin^{-1}(2b/1+b^2) = \tan^{-1} x$, then x is equal to
a. (a-b)/(1+ab)
b. b/(1+ab)
c. b/(1-ab)
d. (a+b)/(1-ab)

75. The point of intersection of the lines X+1/3 = y+3/3 = z+5/7 and X-2/1 = y-4/3 = z-6/5 is
a. (½ , ½, - 3/2)
b. (-½ , -½, 3/2)
c. (½ , -½, - 3/2)
d. (- ½ , ½, 3/2)

76. The area of the circle and the area if a regular polygon of n sides and of perimeter equal to that of the circle are in the ratio of
a. Tan(π/n) : π/n
b. cos(π/n) : π/n
c. sin(π/n) : π/n
d. cot(π/n) : π/n

77. the graph of a quadratic equation/ function is :

a. circle
b. ellipse
c. parabola
d. hexagon

78. An insurance company insured 2000 scooter drivers, 4000 car drivers and 6000 truck drivers. The probability of an accident involving a scooter drivers, car drivers and truck drivers is 0.01,0.03,0.15 respectively. One of the insured persons meets with an accident. The probability that he is a scooter drivers is
    a. 1/52
    b. 1/53
    c. 2/51
    d. None
79. The in radius of the triangle whose sides are 3,5,6, is
    a. $\frac{\sqrt{8}}{7}$
    b. $\sqrt{8}$
    c. $\sqrt{7}$
    d. $\frac{\sqrt{7}}{8}$
80. The area of the region bounded by the curve y=x |x|, x-axis and the ordinates x=1,x=-1 is given by
    a. 0 sq unit
    b. (1/3) sq unit
    c. (2/3) sq unit
    d. 1 sq unit
81. If boiling point of water t0 95^0 . What will be reduction at Celsius scale?
    a. 7^0 C
    b. 65^0 C
    c. 63^0 C
    d. 35^0 C
82. A spring constant k is cut into two equal parts. A block of mass m is attached with one part of spring .what is the frequency of block with original spring.
    a. $\sqrt{2\alpha}$
    b. α/2
    c. 2α
    d. α
83. Why is there sudden increase in current in zener diode?
    a. Due rupture of bonds

b. Resistance of depletion layer becomes less
c. Due to high doping
d. None of these

84. The Coefficient of coupling between two coil of self-inductances L_1 and L_2 is unit. If means
a. 50% flux of L1 is linked with L2
b. 100% flux of L1 is linked with L2
c. $\sqrt{l}_t$ flux of L1 is linked with L2
d. None

85. One curie is equal to
a. 3.7×10^6 disintegration per second
b. 3.7×10^{10} disintegration per second
c. 3.7×10^7 disintegration per second
d. one disintegration per second

86. two ball of radius R and equal mass are placed in contact then the force of gravitational between them is proportional to
a. F a $1/r^2$
b. F a r
c. F a r^2
d. F a 1/r

87. A water hose of internal diameter of 20mm discharge 30kg of water in 60sec. calculate speed of water (p for water is $1000kg/m^3$)
a. 1.2 m/s
b. 1.6m/s
c. 1.8m/s
d. 2.1m/s

88. Three charges $1\mu C$, $2\mu C$, $3\mu C$ are kept at vertices of an equilateral triangle of side 1 m. if they are brought nearer so that they now form equilateral triangle of side 0.5m, then work done is
a. 11j
b. 1.1j
c. 0.011j
d. 0.11j

89. The dimensions of Planck's constant
a. $M^2L^2T^{-2}$
b. MLT^{-2}
c. ML^2T^{-2}
d. ML^2T^{-1}

90. Dimension of Bulk modulus is
a. $M^{-1}LT^{-2}$
b. $ML^{-1}T^{-2}$
c. $ML^{-2}T^{-2}$

d. $M^2L^2T^{-2}$

91. The dot product of force and velocity is equal to
    a. Power
    b. Impulse
    c. Couple
    d. Momentum
92. The property of the moving object by virtue of which it excites exerts force on the object that tries to stop it is
    a. Inertia of the body
    b. Quantity of motion of body
    c. Acceleration of body
    d. All of these
93. Why is refractive index in a transparent medium greater than one
    a. Because the speed of light in vacuum is always less than the speed in transparent medium
    b. Because the speed of light in vacuum is always greater than the speed in transparent medium
    c. Frequency of wave changes when it crosses medium
    d. None of them
94. If the length of tube is less and cannot accommodate the maximum rise of liquid then
    a. Liquid will form fountain
    b. Liquid will not rise
    c. The meniscus will adjust itself so that the water does not spil
    d. None
95. A ball is dropped from height 20m. If coefficient of restitution is 0.9. what will be the height attained after 1^{st} bounce
    a. 1.62m
    b. 16.2m
    c. 18m
    d. 14m
96. In the phenomena of diffraction of light , when blue light is used in the experiment in spite of red light, then
    a. Fringes will become narrower
    b. Fringes will become broader
    c. No changes in fringe width
    d. None
97. Average power generated in an inductor connected to an AC source is
    a. ½ Li^{-2}
    b. Li^2
    c. 0
    d. None

98. A disc is rolling on the inclined plane, what is the ratio of its rotational K.E to the total K.E
    a. 1:3
    b. 3:1
    c. 1:2
    d. 2:1
99. Which is non central force
    a. Electrostatic force
    b. Nuclear force
    c. Gravitational force
    d. None
100. When the maximum K.E of a simple pendulum is k. Then what is its displacement (in terms of amplitude α) when its K.E is k/2?
    a. a/$\sqrt{2}$
    b. a/2
    c. a/$\sqrt{3}$
    d. a/3
101. a glass slab($\mu = 1.5$) of thickness 6 cm is placed over a paper.what is the shift in the letters?
    a. 4cm
    b. 2cm
    c. 1cm
    d. None
102. N type semiconductor is
    a. +ively charged
    b. -ively charged
    c. Neutral
    d. +ive or –ive depending upon doping material
103. Magnetic susceptibility of a diamagnetic substance
    a. Decreases with temperature
    b. Is not affected by temperature
    c. Increase with temperature
    d. 1st increase and the decreases with temperature
104. Two capacitors of capacitance C are connected in series if one of them is filled with dielectric substance k, what is the effective capacitance?
    a. kC/(1+k)
    b. (K+1)
    c. 2Kc/1+k
    d. None
105. Energy stored in stretching a string per unit volume is
    a. (½) x stress x strain

b. stress x strain
c. (½) x γ x (strain)^2
d. (½) x γ x (stress)^2

106. The escape velocity from the earth gravitational field depends upon,
a. Rotation of earth
b. Mass of body
c. Radius of earth
d. Mass of earth

107. If the earth stops rotating, the value of g at the equator
a. Increases
b. Decreases
c. No effect
d. None

108. For a refrigerator, sink temperature 280k. Efficiency required is 50% that of Carnot's. What will be the temperature of source?
a. 927k
b. 1037k
c. 1100k
d. 1027

109. A spring (spring constant =k) is cut into 4 equal parts and two parts are connected in parallel. What is the effective spring constant?
a. 4k
b. 16k
c. 8k
d. 6k

110. If the velocity of a body becomes half the kinetic energy of the body will become
a. One fourth
b. Double
c. Four time
d. Half

111. Energy of characteristics x ray is a consequence of
a. Energy projectile electron
b. Thermal energy of target
c. Transition in target atoms
d. None

112. A particle is projected at an angle of 45^o
a. R=4H

b. 4R=H
c. 2R=H
d. None of these

113. An antenna is of height 500m. What will be its range (radius of earth is 6400km).
a. 800km
b. 100km
c. 50km
d. 80km

114. Temperature of two stars is in ratio 3; 2. If the wavelength of max intensity of 1st body is 4000λ. What is corresponding wavelength of second body
a. 9000λ
b. 6000λ
c. 2000λ
d. 8000λ

115. Which frequency range is used for optical communication?
a. 300Mhx to3GHz
b. 200Mhx to3GHz
c. 30Mhx to3GHz
d. None

116. Which of the following is forward bias?
a. -5v → 5v
b. 0v → 2v
c. -1v → -1.5v
d. None

117. For Em wave propagating along x axis has E_{max} =30V/m what is max value of magnetic field?
a. 10^{-7}tesla
b. 10^{-8}tesla
c. 10^{-9}tesla
d. 10^{-6}tesla

118. Two diode having resistance 20Ω and is center tapped with potential difference 50v. if external resistance is 980Ω what is current through resistance?
a. 0.05A
b. 0.025A
c. 0.25A
d. 0.5A

119. The angular velocity for daily rotation of the earth is
a. π/3 Radian/hr
b. π/6 Radian/hr
c. π/12 Radian/hr
d. π12Radian/hr

120. One curie is equal to
   a. 3.7×10^{10} disintegration per second
   b. 3.2×10^{8} disintegration per second
   c. 2.8×10^{10} disintegration per second
   d. None

121. a steel ball is dropped in oil
   a. ball attains constant velocity after some time
   b. ball stops
   c. speed of ball will keep on increasing
   d. none

122. the weight of a pilot when diving down in a jet plane with an acceleration of $9.8 m/s^2$ will become:
   a. double
   b. half
   c. negative
   d. 0

123. Radius of one arm of hydraulic lift is four times of radius of other arm what force should be applied on narrow arm to lift 100kg?
   a. 26.5N
   b. 62.5N'
   c. 6.25N
   d. 8.3N

124. What is the ratio of gravitational mass and internal mass?
   a. 1:g
   b. g:1
   c. 1:1
   d. g:G

125. the wave front of a distant source of unknown shape is approximately
   a. spherical
   b. cylindrical
   c. elleptoid
   d. plane

126. the geostationary satellite are
   a. stationary w.r.t earth
   b. rotating with speed of earth
   c. rotating very fast
   d. rotating very slow

127. For compound microscope $f_0 = 1$ an $f_e = 25$ an object is placed at a distance 1.2cm from objective lens. What should be length of microscope for normal adjustment?

a. 8.5cm
b. 8.3cm
c. 6.5cm
d. 6.3cm

128. The gate for which output is high if at least one input is low?

a. Nand
b. Nor
c. And
d. Or

129. Magnetic force required demagnetizing the material

a. Retainingly
b. Coericity
c. Energy loss
d. Hysteresis

130. $ML^{-1}T^{-1}$ are the dimension of :

a. Angular momentum
b. power
c. impulse
d. viscosity

131. the pressure will be low where the speed of the fluid is

a. 0
b. High
c. Low
d. Constant

132. If r =1.0 x 10^{-4} ***p =*** 1000kgm.s^{-3} , ή =19 x 10^{-6} $kgm^{-1}s^{-1}$ find v_t terminal velocity

a. 1.02 10^{-3} m/s
b. 0.12 10^{-3}m/s
c. 1.1m/s
d. 1.21m/s

133. A two meter high tank is full of water. A hole is made in the middle of the tank. The speed of efflux is

a. 4.9m/s
b. 9.8m/s
c. 4.42m/s
d. 3.75m/s

134. According to equation of continuity a1v1 =a2v2 =k the constant is equal to

a. Flow rate
b. Volume of fluid
c. Mass of fluid

d. Density of fluid

135. Separation of flow occurs due to reduction of pressure gradient to
   a. 0
   b. Negligibly low value
   c. The extent such that vapor formation starts
   d. None

136. Nm^{-2} or Pa are the units of
   a. Stress
   b. Strain
   c. Modulus of elasticity
   d. A and C

137. Which one of the following physical quantities does not have the dimensions of force per unit area?
   a. Stress
   b. Strain
   c. Young modulus's
   d. Pressure

138. Material in which valence electrons are tightly bound to their atoms at low temperature are called
   a. Semi-conductor
   b. Super conductor
   c. Insulator
   d. Conductors

139. The quantity which specifies the displacement as well as direction of motion in simple harmonic motion is the
   a. Phase angle
   b. Angular frequency
   c. Path difference
   d. None

140. Two identical wires of the same material and same length have their radii in the ratio of 1; 2. The ratio of the stress produced in them for the same tension is
   a. 1:2
   b. 4:1
   c. 2:1
   d. 4:1

141. The Microsoft window is included in which of the following
   a. Operating system

b. Language
c. Hardware
d. Interface

142. In windows where is the start button?
a. Task bar
b. In my computer
c. Both A and B
d. None

143. In windows when some item is deleted where does it goes
a. My computer
b. My document
c. Recycle bin
d. Control panel

144. In windows which of the following button is used to completely turn off the computer?
a. Shut down
b. Log off
c. Hibernate
d. Restart

145. In windows which of the following is not in control panel?
a. System and security
b. Network and internet
c. Programs
d. All of above are present

146. In window the new folder can be made at which of the following locations?
a. In drives
b. On desk top
c. Both A and B
d. None

147. In windows, how can we open a new folder option?
a. By right click of mouse
b. Left click of mouse
c. Both A and B
d. None

148. In my computer window which of the following menu has select all option
a. File
b. Edit
c. View
d. None

149. In windows, we can change the background from which of the following option
   a. Properties options by right click on desktop
   b. From edit menu in my computer window
   c. Both A and B
   d. None
150. From where a computer can get a virus?
   a. Email
   b. Internet
   c. Both A and B
   d. None
151. Where does status bar lies on the computer window?
   a. At the top of window
   b. At the bottom of the window
   c. On left side
   d. On right side

152. In window add / Remove hardware option is in which of the following?
   a. Control panel
   b. In my computer
   c. Right click on desk top
   d. All of above
153. In computers, where does the removable storages are displayed?
   a. In my computer
   b. On desktop
   c. Both A and b
   d. None
154. In computer which of the following is a used to delete virus?
   a. Antivirus
   b. Corel
   c. Both A and B
   d. None
155. Microsoft word belongs to which of the following types of program?
   a. Word processing program
   b. Hardware
   c. Operating system
   d. None of above
156. Which of the following is a character of MS word?
   a. Save document for future use
   b. Have built in spelling checker

c. Auto text
d. All of above

157. In MS word at the very top of the screen which bar exists?
a. Tool bar
b. Status bar
c. Title bar
d. Menu bar

158. In ms word menu bar contains which of the following options?
a. File
b. Table
c. Format
d. All of above

159. Which of the following have no drop down menu in Ms Word?
a. File
b. Undo typing
c. Table
d. Format

160. Options on the tool bar in ms word exist in which of the followings?
a. Icons
b. File
c. Format
d. Table

161. Paste option in ms word is in which of the following menu?
a. Home
b. File
c. Format
d. Table

162. Formatting in Ms word allows you which of the following actions to your text
a. Changing style
b. Changing font
c. Changing size
d. All of above

163. In Ms Word when a text is copied it appears on which of the following?
a. Clip board
b. On status bar
c. Both A and B
d. None

164. In MS word we can add which of the following on the document

a. Graphs
b. Tables
c. Symbols
d. All of above

165. In MS word indent and spacing can be done with which of the following option?
a. Paragraphs
b. Tools
c. Edit
d. None

166. In MS word if there is a grammatical mistake than which of the following line appears under the line or words
a. Green wavy line
b. Red wavy line
c. Both A and B
d. None of these

167. In Ms Word which of the following is short key for copy a text?
a. CTRL +C
b. CTRL +V
c. CTRL +X
d. CTRL +Z

168. In Ms Word documents saved go where by default?
a. My computer
b. My documents
c. On desktop
d. None of these

169. In MS word where undo n redo option exist?
a. On tool bar
b. In file menu
c. Both A and B
d. None

170. Programmers use which of the following method to solve the problems?
a. Software development
b. Engineering and scientific methods
c. Systems approach
d. none

171. there was a surprising story in the paper about the_____car was stolen
a. man which his
b. man whose his

c. man that his
d. man whose

172. Several times during the session the director_____to tell his success story to other promotion officers.
a. Asked he
b. Asked who
c. Asked him
d. Asked his

173. When one need career couselling,_____go to the college career advisor
a. You should
b. it should
c. he should
d. one should

174. Did anybody do the work_____?
a. Themselves
b. Him selves
c. His self
d. None

175. Take your application to the_____you think can help you.
a. Person whom
b. Person
c. Person who
d. Person which

Read the passage and answer the question given at the end of passage?

Read the passage and answer the questions given at the end of passage (5-10).

Recent advances in science and technology have made it possible for geneticists to find out abnormalities in the unborn foetus and take remedial action to rectify some defects which would otherwise prove to be fatal to the child. Though genetic engineering is still at its infancy, scientists can now predict with greater accuracy a genetic disorder. It is not yet an exact science since they are not in a position to predict when exactly a genetic disorder will set in. While they have not yet been able to change the genetic order of the gene in germs, they are optimistic and are holding out that in the near future they might be successful in achieving this feat they have however, acquired the ability in manipulating tissue cells. However, genetic misinformation can sometimes be damaging for it may adversely affect people psychologically. Genetic information may lead to a tendency to brand some people as inferiors. Genetic information can therefore be abused and its application in deciding the sex of the fetus and its subsequent abortion is now hotly debated on ethical lines. But on this issue geneticists cannot be squarely blamed though this charge has often been leveled at them. It is mainly a societal problem. At present genetic engineering is costly process of detecting disorders but scientists hoped to reduce the costs when

technology becomes more advanced. This is why much progress in this area has been possible in scientifically advanced and rich country like the U.S.A, U.K and Japan .It remains to be seen if in the future this science will lead to the development of a race of supermen or will be able to obliterate disease from this world.

176. Which of the following is the same in meaning as the phrase "holding out" as used in passage?
   a. Catching
   b. Expounding
   c. Sustaining
   d. Restraining

177. According to the passage the question of abortion is
   a. Ignored
   b. Hotly debated
   c. Unanswered
   d. Left to the scientists to decide

178. Which of the following is true regarding the reasons for progress in genetic engineering?
   a. It has become popular to abort female fetuses
   b. Human beings are extremely interested in heredity
   c. Economically sound and scientifically advanced countries can provide the infrastructure for such research.
   d. Poor countries desperately need genetic information.

179. Which of the following is same in meaning as the word "obliterate" as used in passage?
   a. Wipe off
   b. Eradicate
   c. Give birth to
   d. Wipe out

180. Which of the following is the opposite in meaning to the word "charged" as used in the passage?
   a. Calm
   b. Disturbed
   c. Discharged
   d. Settled

181. Agenda: conference (analogy)
   a. Teacher : class
   b. Agency : assignment (analogy)
   c. Map : trip
   d. Man : women

182. Manacle : male factor (analogy)

a. Juvenile : delinquent
b. Suave : Maniac
c. Muzzle : dog
d. Pinto : tether

183. Aerie : Eagle (analogy)
a. Venom : rattle snake
b. Viper :reptiles
c. Hawk : falcon
d. Lair : wolf

184. Altimeter : height (analogy)
a. Speedometer : speed
b. Observatory :constellation
c. Racetrack : furlong
d. Vessel : knots

185. Slipshod : organization (analogy)
a. Clever: shroud
b. Cringing : obsequious
c. Prodigal : generosity
d. Phlegmatic : emotion

186. Rookie synonyms
a. An old man
b. A new recruit
c. A fighter
d. A wrestler

187. Catharsis synonyms
a. Sudden
b. outlet for strong emotions
c. anti-climax
d. informal discussion

188. Adapt Antonym
a. Approve
b. Applaud
c. Shed
d. Reject

189. Atheist Antonym
a. Hypnotic
b. Bane
c. Believer

d. Theorist

190. Generous antonym
   a. Cruel
   b. Noble
   c. Selfish
   d. Lavish

191. Karkey is a_____rental power ship.
   a. Turkish
   b. Syrian
   c. Afghani
   d. Iraqi

192. According to a recent report by the united nation refugee agency_____is the lages refugee-hosting country in the world
   a. Pakistan
   b. Afghanistan
   c. Iraq
   d. Turkey

193. There are only_____qualified neurologist in Pakistan for the population of 180 million.
   a. 120
   b. 130
   c. 140
   d. 150

194. Mohtarma Benazir Bhutto shaheed medical college is located in
   a. Mirpur AJK
   b. Hyderabad
   c. Muzaffarabad
   d. Karachi

195. Who is largest provider of troops to the Afghanistan war outside NATO?
   a. Australia
   b. South Africa
   c. West indies
   d. New Zealand

196. The World Health Organization (WHO) announced that_____is the largest endemic poliovirus "reservoir" in the world.
   a. Lahore
   b. Multan
   c. Peshawar

d. Hyderabad

197. Which university awarded an honorary degree of Ph.D. to Nawaz Sharif in recognition of his services for the nation?

a. GCU, Lahore
b. PU, Lahore
c. BZU Multan
d. IU Bahawalpur

198. Name the country that won the final of hero hockey world cup league 2014

a. New Zealand
b. Argentina
c. Spain
d. Netherland

199. Name country that is likely to join the world trade organization (WTO) with in next three months?

a. Syria
b. Iran
c. Iraq
d. Afghanistan

200. 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