



A.P.J. Abdul Kalam Welfare Society

# All India Bright Student Award Test 2016

Class :VII

Time:11 am to 1 p.m.

## Mathematics

- The ratio of side to the diagonal of a square is  
a) 1:2    b) 2:1    c)  $1:\sqrt{2}$     d) None
- The sum of opposite angles in a cyclic quadrilateral is  
a)  $90^\circ$     b)  $270^\circ$     c)  $175^\circ$     d) None
- R and r are radii of two circles with d as the distance between the centers. If the circles have no common tangents then  
a)  $R = d + r$     b)  $R < d + r$     c)  $R > d + r$     d) None
- In an equilateral triangle, the points orthocenter, circumcentre, centroid and incentre form  
a) Collinear    b) parallelogram    c) coincident    d) None
- The number of tangents that can be drawn to two circles if they touch internally is  
a) 1    b) 2    c) 3    d) 4
- O is the center of circle and AB, CD are two perpendicular diameters of the circle, then the length of AC is  
a) 3 AB    b) AB    c) 2AB    d)  $\frac{AB}{\sqrt{2}}$
- The point of concurrence of the medians of a triangle is  
a) Incentre    b) Orthocentre    c) Centroid    d) Circumcentre
- In a right angled triangle ABC, AD is perpendicular to the hypotenuse BC then  $AD^2 =$   
a)  $AB \times BD$     b)  $AD \times BC$     c)  $AB \times AC$     d)  $BD \times DC$
- The opposite angles of a cyclic quadrilateral are  
a)  $90^\circ$     b) Supplementary    c) Complementary    d) None
- ABCD is a rectangle, E is a point on DC, and then ratio of triangle ABE and rectangle ABCD is  
a) 1:1    b) 1:2    c) 1:4    d) 2:1
- The two triangles on the same base and equal areas lie between  
a) Same parallel lines    b) two straight lines    c) perpendicular lines    d) intersecting lines
- Number of common tangents that can be drawn to two concentric circles  
a) 3    b) 2    c) 4    d) 0

13. If the sides of a triangle ABC are 7, 24 and 25, what type of triangle it is

- a) Right angled    b) Equilateral    c) Isosceles    d) Right angled isosceles

14. The ratio of two similar triangles sides are 4:9, their areas

- a) 4:9    b) 9:4    c) 2:3    d) 16:81

15. If  $R=5$ ,  $r=3$  are radii  $d=6$  is the common distance between the centres, number of common tangents that can be drawn

- a) 1    b) 2    c) 3    d) 4

16. If the area of the rectangle is 720 sq.cm and its perimeter is 112 cm. Find its length and breadth respectively

- a) 26, 20    b) 36, 20    c) 20, 16    d) 16, 20

17. The length and diagonal of a rectangle are 4cm and 5cm respectively then find its area

- a) 20sq.cm    b) 18 sq.cm    c) 16sq.cm    d) 12sq.cm

18. If the perimeter and breadth of a rectangle are 34 and 5 respectively then find its area

- a) 36 sq.cm    b) 18 sq.cm    c) 16 sq.cm    d) 12 sq.cm

19. Length of the side of square is 21 cm find its area

- a) 84 sq.cm    b) 42 sq.cm    c) 441 sq.cm    d) 221 sq.cm

20. Area of square garden is 324 sq.m. Find its diagonal

- a)  $9\sqrt{2}$  cm    b)  $12\sqrt{2}$  cm    c)  $18\sqrt{2}$  cm    d) 18cm

21. If diagonal of a square is  $10\sqrt{2}$  cm, find its area

- a) 40 sq.cm    b) 81 sq.cm    c) 121 sq.cm    d) 100 sq.cm

22. One side of a rhombus is 6.5 cm and the altitude is 4cm find the area of the rhombus

- a) 25 sq.cm    b) 36 sq.cm    c) 26 sq.cm    d) 29 sq.cm

23. The diagonal of a rhombus are 15 cm and 20 cm what is its area

- a) 300 sq.cm    b) 75 sq.cm    c)  $300\frac{1}{2}$  sq.cm    d) 150 sq.cm

24. In a rhombus, the length of sides and diagonal are 12.5 and 20 cm. finding its perimeter

- a) 150 cm    b) 50 cm    c) 75 cm    d) 60 cm

25. Find the area of a rhombus whose side is 5 cm and altitude is 2.8 cm?  
a) 14 sq.cm      b) 28 sq.cm      c) 7 sq.cm      d) 21 sq.cm
26. Each side of a rhombus is 6 cm and its area is 10.2 sq.cm Find the altitude of rhombus  
a) 3.4 cm      b) 1.7 cm      c) 5.1 cm      d) 2.6 cm
27. The area of rhombus is 28 sq.cm and its perimeter is 28 cm. find its altitude  
a) 3 cm      b) 4 cm      c) 5 cm      d) 6 cm
28. A field in the form of rhombus has each side of length 64 m and altitude 16 m, what is the side of a square field which has same area as that of rhombus.  
a) 26 cm      b) 29 cm      c) 32 cm      d) 35 cm
29. The bases of a trapezium are 8 cm and 6 cm while its altitude is 4 cm what is the area of trapezium  
a) 14 sq.cm      b) 21 sq.cm      c) 28 sq.cm      d) 35 sq.cm
30. Find the circumference of a circle whose radius is 21 cm?  
a) 123 cm      b) 121 cm      c) 132 cm      d) 142 cm
31. Find the diameter of circle whose circumference is 18.7m?  
a) 6m      b) 5m      c) 7m      d) None
32. The ratio of radius of two circles is 3:2 what is the ratio of circumference?  
a) 2:3      b) 4:6      c) 6:4      d) 3:2
33. Difference between the sum and Difference of two numbers is 32 find the smaller number?  
a) 12      b) 10      c) 16      d) 32
34. The difference of two numbers is 14 and their sum is 40. Find out the product of two numbers?  
a) 975      b) 280      c) 531      d) None
35. Ramesh has multiplied his monthly salary with 11 months and then added Rupees 9878 to it. If his final amount is Rs 981233 what is his monthly salary  
a) 88053      b) 88350      c) 80530      d) 88305

36. Difference between sum and diff of two numbers is 28 and their product is 336. Find the numbers?

- a) 48,8   b) 26,14   c) 28,16   d) None

37. If 2 trousers and 3 shirts cost Rs. 3500 and 3 trousers and 2 shirts cost Rs. 4000, the price of trousers is

- a) 500   b) 1000   c) 1500   d) 750

38. Difference between squares of two numbers is 51, what is the difference between these two numbers?

- a) 3            b) 2    c) 1        d) can't be determined

39. If the sum of 3 consecutive odd natural numbers is 57 then find the first number?

- a) 17   b) 18   c) 19   d) 21

40. If the product of two natural numbers is 17 then the sum of the square of their reciprocals?

- a) 289   b)  $1/289$    c)  $290/289$    d)  $1/290$

41. 3 shirts and 2 sarees cost Rs 1400 and 5 shirts and 3 sarees cost Rs 2200 then find the cost of 2 sarees and 2 shirts together?

- a) Rs1300   b) Rs 1500   c) Rs 1700   d) Rs 1200

42. Find the numbers if difference is 3 and the sum of their square is 117?

- a) 9, 7   b) 6, 8   c) 7, 7   d) 11, 9

43. How many numbers between 100 and 300 are divisible by 11?

- a) 15   b) 17   c) 18   d) 19

44. How many times 121 must be added to 3621 in order to get a sum 4710?

- a) 7    b) 8    c) 6    d) 9

45. The digit in the unit place of the product  $(2137)^{754}$  is?

- a) 1   b) 3   c) 7   d) 9

46. What is the unit digit in  $(2137)^{754}$  is?

- a) 7   b) 8   c) 9   d) 6

47. Find the unit digit in the product  $(756 \times 428 \times 712 \times 239)$ ?

a) 2 b) 3 c) 5 d) 4

48. When  $25^{25}$  is divided by 26 the remainder is?

a) 1 b) 2 c) 24 d) 25

49. If  $n$  is a natural number, then the largest number dividing  $(n^3 - n)$  is?

a) 2 b) 3 c) 6 d) 12

50. The product of two numbers is 45 and the sum of their squares is 106. Find the numbers?

a) 5, 9 b) 3, 15 c) 45, 1 d) 5, 19

## Science

51. The SI unit of weight is

a) Kgf b) gf c) N d) None

52. The SI unit of density is

a)  $\text{kg/m}^3$  b)  $\text{kgm}^3$  c)  $\text{kg}^3 \text{m}^3$  d)  $\text{kg}^3 \text{m}$

53. A beam balance is employed to measure:

a) Force, b) Mass c) Weight d) None

54. The density of a body is represented by the expression

a)  $D = V/M$  b)  $D = M \times V$  c)  $D = 1/M \times V$  d)  $D = M/V$

55. When air is cooled, its density

a) Increases b) Decreases c) Remains same d) None

56. When water is heated, it expands and

a) Rises upward b) Moves downward c) Remain same at the place d) None

57. In order to find the density of a solid we have to find its:

a) Mass and area b) weight and area c) weight and volume d) weight and mass

58. The density of wood is  $0.65 \text{ gcm}^{-3}$  in CGS system. Its density in SI system is :

a)  $65 \text{ kgm}^{-3}$  b)  $6.5 \text{ kgcm}^{-3}$  c)  $650 \text{ kgm}^{-3}$  d)  $0.65 \text{ kgm}^{-3}$

59. A body moving at a uniform velocity of  $2 \text{ ms}^{-1}$  will have:

a) Uniform acceleration b) non-uniform acceleration c) zero acceleration d) none

60. The unit of frequency of pendulum is :

a) Metre b) second c) hertz d) none

61. The time taken by a freely suspended pendulum to complete one oscillation is:

a) Amplitude b) Frequency c) Time period d) Length of pendulum

62. A person sitting in a speeding train is at rest with respect to :

a) Trees b) Fields c) Buildings d) Other passengers

63. The rate of change of velocity is known as

a) Speed b) Displacement c) Acceleration d) None

64. When a drill bores a hole in a piece of wood, it describes:  
a) Rotator motion b) Translatory motion c) Curvilinear motion d) Rotatory and translator motion
65. A freely falling stone has  
a) Uniform speed b) Uniform velocity c) Uniform acceleration d) Uniform motion
66. The motion described by the string of violin is ;  
a) Oscillatory motion b) vibratory motion c) non periodic motion d) rectilinear motion
67. With the increase in length of a simple pendulum, its time period:  
a) Increase b) Decreases c) Remains same d) None
68. Heat energy produces a sensation of  
a) Warmth b) Coldness c) Both A & B d) None
69. Fastest mode of transmission of heat is  
a) Conduction b) Convection c) Radiation d) None
70. The only liquid at room temperature in which conduction is possible, is  
a) Water b) Benzene c) Alcohol d) Mercury
71. A device in which heat losses are minimized due to conduction, convection and radiation is  
a) Thermometer, b) Bimetallic strip c) Thermos flask d) Solar cooker
72. Black surfaces are:  
a) Good absorbers of heat only c) good radiators of heat only  
b) Poor absorbers of heat d) good absorbers and good radiators of heat
73. A bimetallic strip is made of iron and brass: when heated in a flame  
a) The iron expands more than brass  
b) The brass expands more than iron  
c) Both iron and brass expand equal  
d) None
74. A loose woolen cloth keeps us warm in winter because:  
a) It produces large amount of heat  
b) It prevents heat radiation from body by conduction  
c) It prevents heat radiation from body by convection  
d) It prevents heat radiation from body by radiation
75. A shadow which is partially illuminated is called:  
a) Umbra b) Image c) Penumbra d) None
76. The bouncing of a beam of light from a polished surface in some other direction is called:  
a) Refraction b) Reflection c) Dispersion d) Scattering
77. A medium, which partially allows the light rays to pass through it, is called:  
a) Transparent b) Opaque c) Non luminous d) Translucent
78. The image formed by plane mirror is  
a) Virtual b) Inverted c) Diminished d) Magnified
79. The mirror used by automobiles for rear view is  
a) Plane mirror b) Concave mirror c) Convex mirror d) None
80. The midpoint of spherical mirror is called

- a) Pole b) Center of curvature c) Aperture d) Principal focus
81. A mirror which always forms a virtual, erect and diminished image is:  
a) Plane mirror b) Convex mirror c) Concave mirror d) None
82. A perpendicular drawn on the point of incidence on the surface of mirror is called :  
a) Incident ray b) Reflected ray c) Normal d) None
83. A mirror which is used as a shaving glass  
a) Concave mirror b) Convex mirror c) Plane mirror d) None
84. When a ray of light strikes a plane mirror along the normal, the angle of incidence is :  
a) 90 degree b) 0 c) 45 degree d) None
85. In an open electric circuit:  
a) The path of electric current is completely broken  
b) The path of electric current is not broken  
c) The path of electric current is partially broken  
d) None
86. The path along which electric current flows is called:  
a) Electric circuit b) Insulator c) Conductor d) Resistor
87. A fuse wire is an alloy of  
a) Lead and copper b) Tin and aluminum c) Lead and tin d) tin and copper.
88. One unit of electric energy is equal to  
a) 1KW /hr b) 1w/hr c) 1000 Joules d) None
89. The device is used to generate large amount of electricity  
a) Electric cell b) Storage battery c) Solar cell d) Electric generator
90. The cartridge in dry cell contains  
a) Manganese dioxide and ammonium chloride  
b) Manganese dioxide and zinc dust  
c) Ammonium chloride and zinc dust  
d) Manganese dioxide and activated carbon
91. A fuse wire has a  
a) Very low melting point c) low melting point  
b) High melting point d) Very high melting point
92. Electric energy supplied to homes is measured by  
a) Voltmeter b) Ammeter c) Galvanometer d) Kilowatt hour meter
93. The rate of change of motion in a specified direction is called  
a) Velocity b) uniform speed c) non uniform speed d) None
94. The rate of change of velocity is called  
a) Acceleration b) Accreditation c) Accommodation d) None
95. One complete to and fro motion of a freely oscillating pendulum about its mean position is called  
a) Acceleration b) Oscillation c) Pendulum d) Rest position
96. Sound does not travel in  
a) Vacuum b) solids c) liquids d) gases
97. The frequency of sound increases when the closed length of an air column

- a) Increases b) Decreases c) Remain same d) None
98. The process of transmission of heat energy in solids without the actual movement of particles is called
- a) Conduction b) Convection c) Radiation d) None
99. Which substances do not allow the heat energy to flow through them easily are called
- a) Good conductors b) Bad conductors c) Heat insulators d) B & C
100. The transfer of heat energy from a hot body to a cold body is called
- a) Conduction b) Radiation c) Ventilation d) Convection