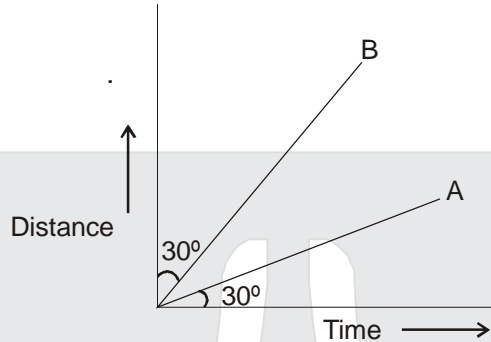


**SCHOLASTIC APTITUDE TEST PAPER**

1. A particle completes two revolutions in 50 seconds in a circular path of radius 7m. Distance covered and displacement in two revolutions will be, respectively.  
 (1) 44m, 14 m                      (2) 88 m, 44m                      (3) 44m, zero                      (4) 88 m, zero

2. Distance – time graph of two cars A and B is shown. The ratio of speeds of A and B.



- (1) 1 : 1                      (2) 1 : 2                      (3) 1 : 3                      (4) 3 : 1

3. Which of the following solid objects will have more inertia, if they have same volumes ?  
 (1) Ice                      (2) Wood                      (3) Iron                      (4) Aluminium

4. A car is moving with a uniform speed of 72 km/h. After applying brakes it stops after travelling 100 m distance. If its mass along with the passengers is 1000 kg, then the value of force due to application of brakes will be ..... in newton.  
 (1) -1000                      (2) -2000                      (3) -3600                      (4) -7200

5. The SI unit of universal gravitational constant (G) is.  
 (1)  $Nm^2kg^{-2}$                       (2)  $Nm^{-2}kg^{-2}$                       (3)  $Nm^{-2}kg^2$                       (4)  $Nm^{-1}m^2kg^2$

6. If the kinetic energy and momentum of an object of mass m are k and p respectively, then the relation between kinetic energy and momentum will be.

- (1)  $p = 2 km$                       (2)  $p = 2 k^2 m$                       (3)  $p = \sqrt{2km}$                       (4)  $p = \sqrt{\frac{2k}{m}}$

7. If mass of an object on the earth is 12 kg, then its weight on the surface of moon will be ..... in newton.  
 (1) 12                      (2) 19.6                      (3) 117.6                      (4) 127.4

8. The physical quantity which has unit pascal is.  
 (1) pressure                      (2) momentum                      (3) density                      (4) relative density

9. The gravitational force between two objects each of mass m, separated by a distance r, is F, Gravitational force between two objects each of mass 2m separated by a distance 2r, will be.

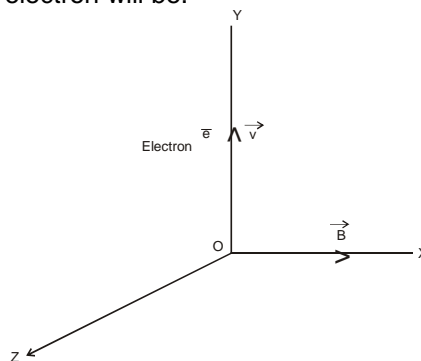
- (1)  $\frac{F}{2}$                       (2) F                      (3) 2F                      (4) 4F,

10. When a sheet of paper and stone is dropped in vacuum freely, then which of the following statements is correct?

- (1) Stone reaches earlier than the sheet of paper on the earth.  
 (2) Sheet of paper reaches earlier than the stone on the earth.  
 (3) Both reach at the same time on the earth  
 (4) Sheet of paper stops but stone reaches on the earth

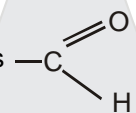
11. The value of one kWh in joule is.  
 (1) 1000                      (2)  $3.6 \times 10^4$                       (3)  $3.6 \times 10^5$                       (4)  $3.6 \times 10^6$

12. A car of mass 1000 kg is moving with velocity  $15 \text{ ms}^{-1}$  on a horizontal plane work done by the force of gravity will be ( $g = 10 \text{ ms}^{-2}$ )  
 (1) zero (2) 1500 J (3) 15000 J (4) 150000 J.
13. By whom of the following infrasonic sound is produced?  
 (1) Porpoises (2) dolphins (3) elephants (4) bats
14. A sound wave has frequency of 4 kHz and wavelength 25 cm. Then distance travelled by sound in 2 sec. (in km) will be.  
 (1) 1 (2) 2 (3) 3 (4) 4
15. When an image formed by a concave mirror is virtual, erect and enlarged, than position of the objects will be.  
 (1) beyond centre of curvature C  
 (2) in between centre of curvature C and focus F  
 (3) at focus F  
 (4) in between pole P and focus F.
16. If half of a convex lens is blackened, then which of the following statements is correct?  
 (1) Image will not be formed  
 (2) Image formed will be half of size of the object and intensity will be unchanged  
 (3) Image will be formed fully but intensity becomes half  
 (4) Image will be formed fully and intensity will be unchanged
17. The far point of a myopic person is at 100 cm in front of the eye. The nature and power of the lens required to correct this problem will be.  
 (1) Concave lens, + 1D (2) concave lens, - 1D (3) convex lens, + 1D (4) convex lens, - 1D
18. Which of the following materials is an alloy?  
 (1) Ebonite (2) Manganese (3) Manganin (4) Nickel
19. The electrical resistivity of the material of conductor is . If its length is doubled and area of cross – section is tripled, then its electrical resistivity will be.  
 (1) (2) 2 (3) 3 (4) 4
20. Three resistors of equal resistance are connected first in series and then in parallel. If the equivalent resistances in both cases are  $R_S$  and  $R_P$  respectively, then the value of  $\frac{R_S}{R_P}$  will be.  
 (1) 1 : 1 (2) 3 : 1 (3) 9 : 1 (4) 1 : 9
21. In the following figure, the motion of an electron is shown in a figure in uniform magnetic field. The direction of force acting an electron will be.



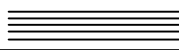
- (1) along positive X – axis  
 (2) along negative X – axis  
 (3) Perpendicular to plane of paper, outwards  
 (4) perpendicular to plane of paper, inwards.

22. Bio- gas contains methane gas.  
 (1) up to 25%                      (2) up to 50%                      (3) up to 12%                      (4) up to 75%
23. The semi- conductor material used for making solar cell is.  
 (1) tungsten                      (2) silicon                      (3) copper                      (4) aluminium
24. Which of the following low energy particles is bombarded on the nucleus of heavy atom in nuclear fission?  
 (1) Proton                      (2) Deuteron                      (3) Alpha particle                      (4) Neutron
25. Which of the following statements is correct?  
 (1) Inside the bar magnet, the direction of magnetic field lines is from its north pole to south pole.  
 (2) Outside the bar magnet, the direction of magnetic field lines is from south pole to north pole.  
 (3) Magnetic field lines are closed curves  
 (4) Magnetic field lines are open curves.
26. Which one of the following is the correct order of increasing attraction between the particles of matter?  
 (1) Water < Hydrogen < Salt                      (2) Hydrogen < Salt < Water  
 (3) Salt < Water < Hydrogen                      (4) Hydrogen < Water < Salt
27. At which temperature will physical state of water be liquid?  
 (1) 265 K                      (2) 298 K                      (3) 378 K                      (4) 398 K
28. Which one of the following is an example of emulsion?  
 (1) Butter                      (2) Fog                      (3) Milk of magnesia                      (4) Milk
29. Which is the suitable method of separation of two miscible liquids having less than 25°C difference in their boiling points?  
 (1) Sublimation                      (2) Fractional distillation                      (3) Chromatography                      (4) Evaporation
30. Which one of the following is not a chemical change?  
 (1) Rusting of iron                      (2) Digestion of food                      (3) Burning of paper                      (4) Melting of candle
31. The correct formula of the compound aluminium sulphite is.  
 (1)  $Al_2(SO_4)_3$                       (2)  $Al_3(SO_3)_2$                       (3)  $Al_2(SO_3)_3$                       (4)  $Al_3(SO_4)_2$
32. What is the number of molecules in 4.25 g of ammonia ?  
 (1)  $2.40 \times 10^{22}$                       (2)  $2.40 \times 10^{23}$                       (3)  $1.51 \times 10^{23}$                       (4)  $1.51 \times 10^{22}$
33. Which one of the following molecules does not have atomicity two?  
 (1) Chlorine                      (2) Nitrogen                      (3) Oxygen                      (4) Phosphorus
34. The number of electrons in the M- Shell of sulphur atom is.  
 (1) 4                      (2) 5                      (3) 6                      (4) 7
35. If the ratio of two isotopes  $^{14}_7X$  and  $^{15}_7X$  of an element X is 4 : 1, its average atomic mass will be.  
 (1) 16.00 u                      (2) 17.75 u                      (3) 12.84 u                      (4) 14.20 u.
36. Which of the following does not possess neutron?  
 (1) Protium [ $^1_1H$ ]                      (2) Deuterium ( $^2_1H$ )                      (3) Tritium ( $^3_1H$ )                      (4) Helium ( $^4_2He$ )
37. Which substance is getting reduced in the following reaction?  
 $ZnO + C \rightarrow Zn + CO$   
 (1) ZnO                      (2) C                      (3) Zn                      (4) CO

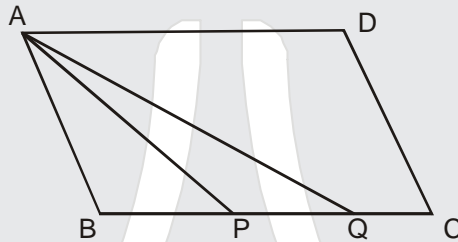
38.  $\text{AgNO}_3(\text{aq}) + \text{NaCl}(\text{aq}) \rightarrow \text{AgCl}(\text{s}) + \text{NaNO}_3(\text{aq})$   
 The reaction given above is which type of the following?  
 (1) Redox (2) Double displacement (3) Dissociation (4) Combination.
39. Which acid is found in ant sting?  
 (1) Acetic acid (2) Oxalic acid (3) Citric acid (4) Methanoic acid
40. The pH values of four solutions A, B, C and D are 12, 4, 7 and 2 respectively. Which of the following statements is false for these solutions?  
 (1) Solution A is basic  
 (2) Solution B and D are acidic  
 (3) Solution D has minimum concentration of  $\text{H}^+$  ions  
 (4) The concentrations of  $\text{H}^+$  and  $\text{OH}^-$  ions are equal in solution C.
41. Which gas reacts with lime water and turns it milky?  
 (1) Oxygen (2) Chlorine (3) Hydrogen (4) Carbon dioxide.
42. Which of the following metals can be cut easily with a knife?  
 (1) Iron (2) Tin (3) Zinc (4) Sodium
43. Which is the most reactive metal among the following?  
 (1) Calcium (2) Zinc (3) Copper (4) Silver
44. Which one of the following compounds has  functional group?  
 (1) Propanol (2) Propanone (3) Propanal (4) Propene
45. What is obtained when ethanol is heated with excess of conc.  $\text{H}_2\text{SO}_4$  at 443 K temperature?  
 (1) Ethane (2) Ethene (3) Ethyne (4) Methane
46. Which one of following hydrocarbons will not display addition reaction?  
 (1)  $\text{C}_2\text{H}_4$  (2)  $\text{C}_2\text{H}_2$  (3)  $\text{C}_3\text{H}_6$  (4)  $\text{C}_3\text{H}_8$
47. Which one of the following properties does not belong to ionic compounds?  
 (1) Hard and brittle (2) High melting and boiling points  
 (3) Usually water soluble (4) Good conductor of electricity in solid state.
48. If X, Y, and Z are Dobereiner triads and atomic masses of X and Z are 15 and 75, respectively, what will be the atomic mass of Y?  
 (1) 45 (2) 60 (3) 90 (4) 30
49. Which one of the following atoms is biggest in size?  
 (1) B (2) Be (3) O (4) N
50. The element which stands in third period and second group of modern periodic table is.  
 (1) Sodium (2) Beryllium (3) Magnesium (4) Aluminium.
51. The scientist who further expanded cell theory was.  
 (1) Leeuwenhoek (2) Schleiden (3) Virchow (4) Purkinje
52. The pair of organelles which are able to make their own protein is.  
 (1) Mitochondria, Lysosome (2) Ribosome, Lysosome  
 (3) Plastid, Golgi body (4) Plastid, Mitochondria

53. The chemical present on cell wall of bark in plants is.  
(1) Cutin (2) Suberin (3) Lignin (4) Pectin
54. Correct pair of essential micronutrients for plant growth is.  
(1) iron, magnesium (2) phosphorus, sulphur (3) potassium, chlorine (4) zinc, copper
55. The organism which is more sensitive to the level of sulphur dioxide in the air is.  
(1) Algae (2) Fungi (3) Lichen (4) Bacteria
56. The hormone responsible for wilting of leaves is.  
(1) Auxin (2) Cytokinin (3) Gibberellin (4) Abscisic acid.
57. During anaerobic respiration, the chemical built up in our muscles is.  
(1) Pyruvic acid (2) Lactic acid (3) Oxaloacetic acid (4) Citric acid
58. The growth of pollen tube towards ovule shows.  
(1) Hydrotropism (2) Phototropism (3) Geotropism (4) Chemotropism
59. If produce of a terrestrial food chain synthesises 1000 k.cal food energy, then the quantity of food energy that reaches to tertiary consumers will be.  
(1) 1000 k. cal (2) 100 k. cal (3) 10 k. cal (4) 1k .cal.
60. The name of local system of canal irrigation in Himachal Pradesh is?  
(1) Tal (2) Kulh (3) Nadi (4) Pyne
61. In animals, hormone secretion control mechanism is called as.  
(1) secretion mechansim (2) feedback mechanism  
(3) hyposecretion mechanism (4) hypersecretion mechanism
62. An example of phylum echinodermata is.  
(1) Leech (2) Housefly (3) Liver fluke (4) Starfish
63. Which of the following diseases is caused due to the deficiency of RBC?  
(1) Anaemia (2) Haemophilia  
(3) Leukaemia (4) Thrombocytopenia
64. Which of the following is not a sexually transmitted disease?  
(1) Syphilis (2) Gonorrhoea (3) AIDS (4) Tuberculosis.
65. Cell organelle, which has own DNA and ribosome is.  
(1) Mitochondria (2) Lysosome (3) Golgi apparatus (4) Vacuoles
66. An example of cold – blooded animal is.  
(1) Echidna (2) Kangaroo (3) Pigeon (4) Snake
67. Which organ controls involuntary reactions?  
(1) Cerebellum (2) Cerebrum (3) Medulla (4) Forebrain
68. Spinal chord is protected by the structure.  
(1) Vertebral column (2) Skull (3) Sternum (4) Ribs
69. Protein digesting enzyme secreted by gastric gland is.  
(1) Trypsin (2) Pepsin (3) Erepsin (4) Lipase
70. The biological process involved in the removal of harmful metabolic waste from the body is called.  
(1) Respiration (2) Defecation (3) Excretion (4) Egestion

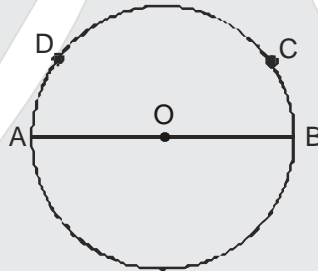




71. The product of  $\sqrt[3]{2} \times \sqrt[4]{2} \times \sqrt[12]{32}$  is equal to.  
 (1)  $\sqrt{2}$  (2) 2 (3)  $\sqrt[12]{2}$  (4)  $\sqrt[12]{32}$
72. If  $x^{11} + 11$  is divided by  $x + 1$ , then the remainder is.  
 (1) 9 (2) 10 (3) 11 (4) 12
73. In  $\Delta PQR$  if  $\angle R > \angle Q$  then  
 (1)  $QR > PR$  (2)  $PQ > PR$  (3)  $PQ < PR$  (4)  $QR < PR$
74. In a rhombus ABCD,  $\angle ACB = 40^\circ$ , then  $\angle ADB$  is.  
 (1)  $40^\circ$  (2)  $45^\circ$  (3)  $50^\circ$  (4)  $60^\circ$
75. In the given parallelogram ABCD, points P and Q divide the side BC in three equal parts. Then the ar. (APQ) is equal to.



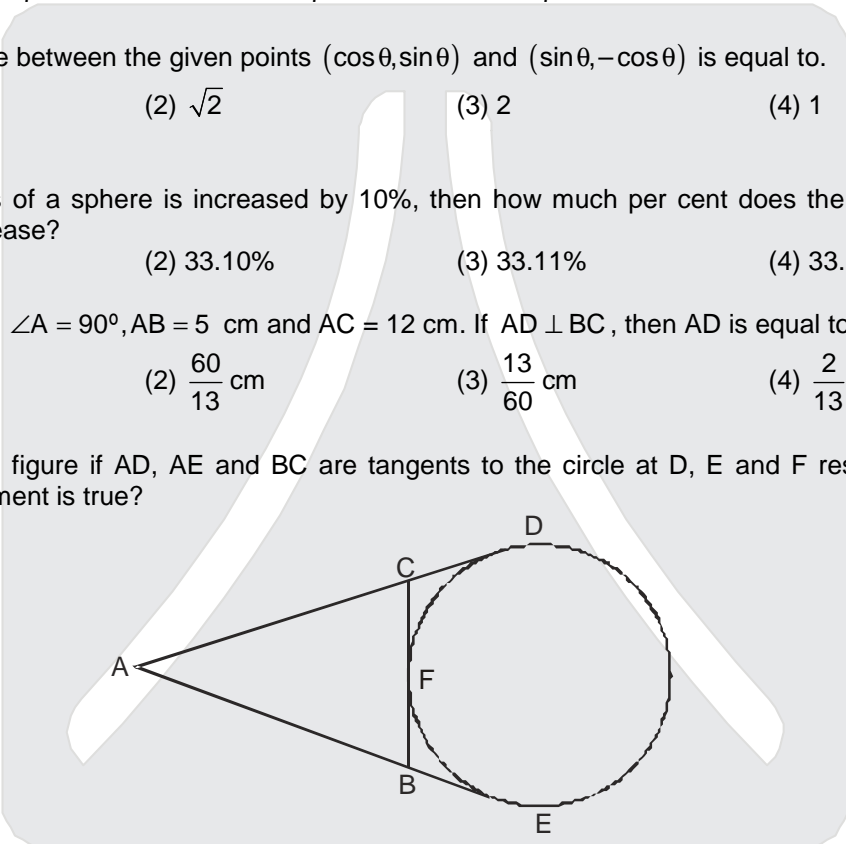
- (1)  $\frac{1}{6}$  ar.(ABCD) (2)  $\frac{1}{4}$  ar.(ABCD) (3)  $\frac{1}{3}$  ar.(ABCD) (4)  $\frac{1}{2}$  ar.(ABCD)
76. In AOB is a diameter of the given circle and  $\angle ADC = 120^\circ$  then  $\angle CAB$  is equal to.



- (1)  $30^\circ$  (2)  $60^\circ$  (3)  $45^\circ$  (4)  $90^\circ$
77. In each side of a triangle is doubled, then the ratio of areas of new and initial triangles is equal to  
 (1) 1 : 4 (2) 2 : 1 (3) 1 : 2 (4) 4 : 1

78. If  $\alpha, \beta$  are the zeros of the polynomial  $f(x) = ax^2 + bx + c$  then  $\frac{1}{\alpha^2} + \frac{1}{\beta^2}$  is equal to.  
 (1)  $\frac{b^2 - ac}{a^2}$  (2)  $\frac{b^2 - 2ac}{c^2}$  (3)  $\frac{b^2 + ac}{a^2}$  (4)  $\frac{b^2 + 2ac}{c^2}$
79. If the first, second and last terms of an A.P. are a, b and 2a respectively, then its sum is  
 (1)  $\frac{ab}{2(b-a)}$  (2)  $\frac{ab}{(b-a)}$  (3)  $\frac{3ab}{2(b-a)}$  (4)  $\frac{2ab}{(b-a)}$

80. The value of  $\cos 1^\circ \cdot \cos 2^\circ \cdot \cos 3^\circ \dots \cos 100^\circ$  is.  
 (1) -1 (2) 0 (3) 1 (4) None of these

81. If  $A + B = 90^\circ$  then  $\frac{\tan A \cdot \tan B + \tan A \cdot \cot B}{\sin A \cdot \sec B} - \frac{\sin^2 B}{\cos^2 A}$  is equal to.  
 (1)  $\cot^2 A$  (2)  $\cot^2 B$  (3)  $-\tan^2 A$  (4)  $-\cot^2 A$
82. If  $\cos \theta + \cos^2 \theta = 1$ , then  $\sin^2 \theta + \sin^4 \theta$  is equal to.  
 (1)  $-1$  (2)  $0$  (3)  $1$  (4) None of these
83. The angle of elevation of the top of a tower standing on horizontal plane from a point A is  $\alpha$ . After walking a distance d towards the foot of the tower the angle of elevation is found to be  $\beta$ . The height of the tower is.  
 (1)  $\frac{d}{\cot \alpha + \cot \beta}$  (2)  $\frac{d}{\cot \alpha - \cot \beta}$  (3)  $\frac{d}{\tan \beta - \tan \alpha}$  (4)  $\frac{d}{\tan \beta + \tan \alpha}$
84. The distance between the given points  $(\cos \theta, \sin \theta)$  and  $(\sin \theta, -\cos \theta)$  is equal to.  
 (1)  $\sqrt{3}$  (2)  $\sqrt{2}$  (3)  $2$  (4)  $1$
85. If the radius of a sphere is increased by 10%, then how much per cent does the volume of the sphere increase?  
 (1) 33.00% (2) 33.10% (3) 33.11% (4) 33.12%
86. In a  $\triangle ABC$ ,  $\angle A = 90^\circ$ ,  $AB = 5$  cm and  $AC = 12$  cm. If  $AD \perp BC$ , then AD is equal to.  
 (1)  $\frac{13}{2}$  cm (2)  $\frac{60}{13}$  cm (3)  $\frac{13}{60}$  cm (4)  $\frac{2}{13}$  cm
87. In the given figure if AD, AE and BC are tangents to the circle at D, E and F respectively then which statement is true?  
  
 (1)  $AD = AB + BC + CA$  (2)  $2AD = AB + BC + CA$  (3)  $3AD = AB + BC + CA$  (4)  $4AD = AB + BC + CA$
88. If a wire is bent in the shape of a square, then the area of this square is  $81 \text{ cm}^2$ . If the wire is bent into a semicircular shape, then the area of the semicircle is equal to.  
 (1)  $22 \text{ cm}^2$  (2)  $44 \text{ cm}^2$  (3)  $77 \text{ cm}^2$  (4)  $154 \text{ cm}^2$
89. A bucket, in the form of a frustum of a cone holds 28.49 litres of water. The radii of the top and bottom are 28 cm and 21 cm respectively. Then the height of the bucket is.  
 (1) 15 cm (2) 18 cm (3) 20 cm (4) 10 cm
90. Pythagoras was the student of.  
 (1) Thales (2) Euclid (3) Thales and Euclid both (4) None of these



## Resonance Forward Admission & Scholarship Test (ResoFAST)



EARLY START

MORE BENEFITS

BETTER RESULTS

## ADMISSION ANNOUNCEMENT

Enroll Now for Academic Session 2017-18 @ Coaching Fee of 2016-17

### Classroom Contact Programs for Class V to XII

Target: JEE (Main+Advanced) | JEE (Main) | AIIMS/ NEET | Pre-foundation

#### Academic Benefits\*

More than **800** Academic Hours & **500** Classes

More than **15000** Academic Questions

More than **100** Testing Hours

#### Financial Benefits

Upto ₹ **30000+** Saving on 1 Year Course Fee

**50%** Concession on Admission Form Fee

Upto **90%** Scholarship on Course Fee

#### Test Dates

**20<sup>th</sup> Nov 16** | **27<sup>th</sup> Nov 16**

**11<sup>th</sup> Dec 16** | **25<sup>th</sup> Dec 16** | **15<sup>th</sup> Jan 17**

#### How to get Admission Packet

(a) **Online:** Visit [www.resonance.ac.in](http://www.resonance.ac.in), and buy ONLINE by paying through Credit/Debit Card & Net Banking. | (b) **In Person:** Through Cash/ DD made in favour of 'Resonance', payable at Kota submit at any of the Resonance Study Centres. | (c) **By Post/ Courier:** Make a DD/Pay Order of required amount in favour of 'Resonance', payable at Kota and send it to at Kota only. | (d) COD (sms RESC Your City Name to 56677).

Toll Free: 1800 258 5555 | Visit: [www.resonance.ac.in](http://www.resonance.ac.in)

