

**JUNIOR SCIENCE TALENT SEARCH EXAMINATION (JSTSE)**  
**07 – A / 2018 – 19(For Class – IX)**  
**Held on January 20, 2019**

**GENERAL KNOWLEDGE**  
**(QUESTION NO. 01– 50)**

1. Which of the following mobile application have been launched by government in June 2018 to track and trace missing and abandon children in India?  
 1. Re unite  
 2. Scout  
 3. Pathway  
 4. Umang
2. Which city will host the 15<sup>th</sup> Pravasi Bharatiya Divas in 2019?  
 1. New Delhi  
 2. Gandhi Nagar  
 3. Allahabad  
 4. Varanasi
3. Which country has successfully launched a new communication satellite “APSTAR – 6C”?  
 1. India  
 2. Indonesia  
 3. China  
 4. Malaysia
4. Which platform has been launched by the Union Government on the occasion of 2018 International Women’s day?  
 1. Women Entrepreneurship platform  
 2. Women Power platform  
 3. Women Literacy platform  
 4. Women Health platform
5. Which IIT Institute has installed India’s first 5G radio Laboratory?  
 1. IIT – Delhi  
 2. IIT – Mumbai  
 3. IIT – Indore  
 4. IIT – Roorkee
6. India’s flag – bearer at the closing ceremony of the 21<sup>st</sup> common wealth games held in 2018 -  
 1. Monika Batra  
 2. Saina Nehwal  
 3. Mary Kom  
 4. Heena Sidhu
7. How many India states share border with Myanmar?  
 1. 01  
 2. 02  
 3. 03  
 4. 04
8. First Indian Woman lawyer to be directly promoted as a judge of the supreme court -  
 1. Ranjana Prakash Desai  
 2. Indu Malhotra  
 3. Gyan Sudha Mishra  
 4. Ruma Pal
9. In which city, India’s first helicopter – taxi service has launched  
 1. Bengaluru  
 2. Kochi  
 3. Andhra Pradesh  
 4. Maharashtra
10. In which of the following Indian state forest, ‘Appiko Movement’ which gets inspired by ‘Chipko movement’ took place?  
 1. Karnataka  
 2. Uttrakhand  
 3. Andhra Pradesh  
 4. Maharashtra
11. Official Mascot of winter Olympics – 2018 :  
 1. Soohorang  
 2. Misha  
 3. Olly  
 4. Sam

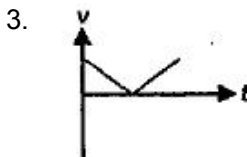
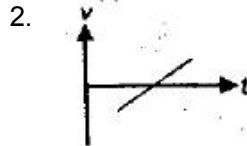
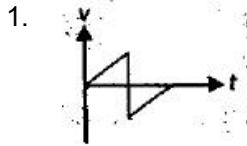
12. India's first insect museum opened in -  
 1. Kerala  
 2. Tamilnadu  
 3. Jharkhand  
 4. West Bengal
13. First Indian woman to fly a fighter aircraft solo: -  
 1. Harita Kaur  
 2. Punita Arora  
 3. Bhawan Kanth  
 4. Avani Chaturvedi
14. In which Indian state, the Nipah virus outbreak was first detected?  
 1. Kerala  
 2. Goa  
 3. Tamilnadu  
 4. Gujarat
15. What was the code name of the first nuclear test conducted by India on May 18, 1974, in Pokhran, Rajasthan.  
 1. Operation Vijay  
 2. Operation Shakti  
 3. Smiling Buddha  
 4. Operation Ashwamedh
16. Project launched by FSSAI to address vitamin D deficiencies (VDD) amongst youngsters -  
 1. Project Sun  
 2. Project Sky  
 3. Project Dhoop  
 4. Project Sunlight
17. Which union ministry in collaboration with Google India has launched a 360° virtual reality (VR) video on incredible India?  
 1. Ministry of Electronics and Information Technology  
 2. Ministry of Information and Broadcasting  
 3. Ministry of Social Justice and Empowerment  
 4. Ministry of Tourism
18. India has become the member of European Bank for Reconstruction and Development (EBRD) in year 2018. Headquarter of EBRD is -  
 1. Berlin  
 2. Geneva  
 3. London  
 4. Paris
19. 'Mount Ojos de Salado' is the highest volcano in the world situated at -  
 1. Japan  
 2. Afghanistan and Russia Border  
 3. Cuba and USA border  
 4. Argentina and Chile border
20. Theme of the 2018 World Population Day (WPD) is -  
 1. Family planning is a human right  
 2. Family planning – Call for people  
 3. Family planning – Save Earth  
 4. Family planning – Say what you need?
21. The Novel that has won the 2018 'Golden Man Booker Prize' is -  
 1. In a tree size  
 2. The English Patient  
 3. Wolf Hall  
 4. Moon Tiger
22. The thickness of stratospheric ozone layer is measured in/on -  
 1. Sieverts  
 2. Dobson units  
 3. Melson units  
 4. Beaufort scale
23. Mudumalai Tiger Reserve (MTR) is now an Eco – sensitive zone (ESZ) located in -  
 1. Kerala  
 2. Karnataka  
 3. Tamilnadu  
 4. Telangana
24. A useful biological indicator of Sulphur dioxide pollution is -  
 1. Bryophyte  
 2. Lichen  
 3. Pseudomonas  
 4. Algal blooms

25. The person who won the first gold medal for India in common wealth game - 2018 is -  
 1. M. Chanu  
 2. Monika Batra  
 3. Mary Kom  
 4. Babita Fogat
26. The inventor of video games is -  
 1. Ralph Baer  
 2. Ralph Nadal  
 3. Dustin Johnson  
 4. Michael Johnson
27. The Sangai Festival is celebrated in -  
 1. Assam  
 2. Manipur  
 3. Mizoram  
 4. Nagaland
28. Each year Ramzan occurs about \_\_\_ from the previous year  
 1. 11 days earlier  
 2. 11 days later  
 3. 17 days earlier  
 4. 17 days later
29. 'The world Beneath His Feet' is a biography of -  
 1. Ajit Wadekar  
 2. Sachin Tendulkar  
 3. Nawab Patoudi  
 4. Pulela Gopichand
30. Which among the following is played on a synthetic hard – court?  
 1. Australian open  
 2. Wimbledon  
 3. French open  
 4. All the three
31. The share of Government of India in NABARD is -  
 1. 50%  
 2. 51%  
 3. 75%  
 4. More then 98%
32. If an egg with shell is placed in a microwave oven, and microwave oven is switched on, which among the following is most likely happen?  
 1. The egg will not get warmed  
 2. The egg will get cooked slowly similar to aboiled egg  
 3. The egg shell will explode  
 4. The egg shell become yellow
33. 'Saffron' is obtained from \_\_\_ part of the plant  
 1. Stigma  
 2. Anther  
 3. Stamen  
 4. Pollen
34. Pest – resistant cotton commonly known as 'Bt-cotton' is genetically engineered by inserting a gene from -  
 1. Bacterium  
 2. Virus  
 3. Microalgae  
 4. Protist
35. From which language the word 'Democracy' has been derived?  
 1. French language  
 2. Greek language  
 3. Urdu language  
 4. Dutch language
36. Who is called the 'Patron of Constitution'?  
 1. President  
 2. Prime – Minister  
 3. High Court  
 4. Supreme Court
37. What are the Prime Minister's office, Defence Minister's office and Ministries of External affairs jointly called in Delhi -  
 1. North Block  
 2. South Block  
 3. East Block  
 4. West Block

38. Who prepares the topographical maps of India?  
1. Geological survey of India  
2. Survey of India  
3. Defence Ministry  
4. Home Ministry
39. Which state is famous for step wells?  
1. Maharashtra  
2. Gujarat  
3. Rajasthan  
4. Manipur
40. Who has been honoured with Ashok Chakra (posthumously) on 26 January 2018?  
1. Jyoti Kumar Singh  
2. Jyoti Prakash Nirala  
3. Jyoti Vishal Gupta  
4. Jyoti Singh Maan
41. World Sustainable Development Summit 2018 held in -  
1. America  
2. Japan  
3. India  
4. Pakistan
42. In which year 'Sh. Atal Bihari Vajpayee' was honoured with 'BHARAT RATAN'?  
1. 2012  
2. 2013  
3. 2014  
4. 2015
43. 11<sup>th</sup> World Hindi Conference was held in which country?  
1. India  
2. Myanmar  
3. Mauritius  
4. Thailand
44. The Zero Discrimination Day (ZDD) is celebrated on?  
1. May 8  
2. June 6  
3. March 1  
4. February 7
45. In which country of world 'Universal Adult Franchise' started in 1893?  
1. England  
2. America  
3. Japan  
4. New Zealand
46. The company that has set up the world's largest mobile phone factory in NOIDA -  
1. Apple  
2. Samsung  
3. Xiomi  
4. OPPO
47. The curriculum that has been launched by Delhi Government in July 2018 is -  
1. Mindfulness curriculum  
2. Meditation for all  
3. Fit Delhi  
4. Happiness Curriculum
48. In which year 'Dadasaheb Phalke Award' was instituted?  
1. 1963  
2. 1965  
3. 1967  
4. 1969
49. The Japanese art 'Ikebana' is related to which among the following?  
1. Wall painting  
2. Flower Decoration  
3. Chorus Dance  
4. Sculptures
50. The mountain pass that forms the 'Tri Junction' of India, China and Myanmar -  
1. Nathula  
2. Jelepala  
3. Bomdila  
4. Diphu

## GENERAL SCIENCE & MATHEMATICS (QUESTION NO 51– 200)

51. The velocity (v) – time (t) graph of a body falling freely from rest under gravity and rebound from solid surface is represented by graph



52. A ball falls freely from rest. The ratio of distance travelled by it in first, second, third and fourth seconds is

1. 1 : 1 : 1 : 1 : 2

2. 1 : 2 : 3 : 4

3. 1 : 1 : 1 : 1 : 13

4. 1 : 3 : 5 : 7

53. What is the ratio of SI unit and CGS unit of  $\left(\frac{G}{g}\right)$ ?

G = universal constant of gravitation

g = acceleration due to gravity

1. 10

2.  $10^2$

3.  $10^{-1}$

4.  $10^{-2}$

54. A bullet in motion hit and get embedded in a solid resting on a frictionless table. What will be conserved

1. Momentum and kinetic energy

2. Momentum alone

3. Kinetic energy alone

4. Neither momentum nor kinetic energy

55. A graph is drawn with force along y-axis and time along x-axis. The area under the graph represents

1. Momentum

2. Impulse of force

3. Change in velocity

4. None of these

56. A body floats with  $\frac{1}{3}$ rd of its volume outside water and  $\frac{3}{4}$ th of its volume outside a liquid.

Then density of liquid is

1.  $\frac{3}{8}$  g / cc

2.  $\frac{8}{3}$  g / cc

3.  $\frac{9}{4}$  g / cc

4.  $\frac{4}{9}$  g / cc

57. A bullet is fired from gun. Which will have greater kinetic energy the bullet or gun?

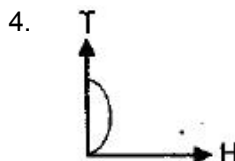
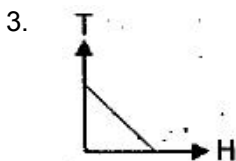
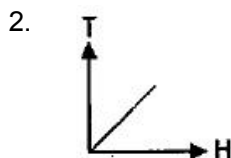
1. gun

2. bullet

3. both have same kinetic energy

4. Insufficient data

58. Which is the best graph of total energy (T) of freely falling body and its height H

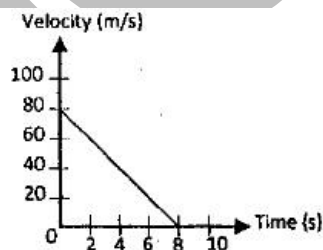


59. A mass of M kg is suspended by a weightless string. The horizontal force that is required to displace it until the string makes an angle of  $45^\circ$  with the initial vertical direction is

1. Mg
2.  $Mg(\sqrt{2} + 1)$
3.  $Mg\sqrt{2}$
4.  $\frac{Mg}{\sqrt{2}}$

60. Velocity time graph for a ball of mass 50 kg rolling on a floor is given, the frictional force of the floor on the ball will be

1. 0.5 N
2. 1.5 N
3. 2.5 N
4. 1 N



61. The average density of the earth in terms of g, G and R

1.  $\frac{9g}{4\pi G^2 R}$
2.  $\frac{3g}{4\pi GR}$
3.  $\frac{3g}{2\pi GR^2}$
4.  $\frac{2g}{3\pi RG}$

g = acceleration due to gravity  
G = universal gravitational constant.  
R = Radius of earth

62. A ball is dropped from a height of 10 m. If the energy of ball reduces by 40% after striking on the ground. How much high can be the ball bounce back

1. 10 m
2. 8 m
3. 6 m
4. 4 m

63. A submarine emits a Sonar pulse which return from an under water cliff in 1.05 second. If speed of sound in salt water is 1531 m/s. How far away is the cliff?

1. 1568 m
2. 803.7 m
3. 1607.4 m
4. 765.5 m

64. The frequency of a source is 20KHz. The frequency of sound wave produced by it in water and air will be

1. Be the same as that of source
2. Depends on the velocity of the wave
3. Depends on the wavelength of the wave
4. Depends on the density of medium

65. A particle is moving in a straight line with initial velocity u and uniform acceleration a. If the sum of the distances travelled in  $t^{\text{th}}$  and  $(t + 1)^{\text{th}}$  seconds is 100 cm. Then its velocity after t second in cm/s is

1. 20
2. 30
3. 50
4. 40

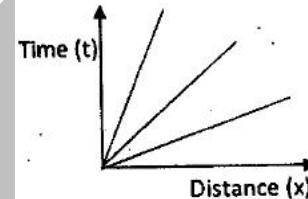
66. In a rocket fuel burns at the of 1 Kg/s. This fuel is ejected from rocket with a velocity of 60 Km/s. This exerts a force on rocket equal to
1. 6000 N
  2. 60, 000 N
  3. 60 N
  4. 600 N

67. A ball is dropped on the floor from a height of 20 m. It rebounds to a height of 10 m. If the ball is in contact with floor for 0.1 s. What is average acceleration during contact?
1.  $142 \text{ m/s}^2$
  2.  $285 \text{ m/s}^2$
  3.  $338 \text{ m/s}^2$
  4.  $564 \text{ m/s}^2$

68. The roofs and walls of the auditorium are generally covered with sound absorbent material to reduce
1. Velocity of sound
  2. Reverberation of sound
  3. Frequency of sound
  4. None of these

69. A stone is dropped from the top of a tower of 125 m height into a pond which is at bottom of tower. When will the splash be heard at top. ( $g = 10 \text{ m/s}^2$ , speed of sound = 340 m/s)
1. 5 s
  2. 0.36 s
  3. 5.36 s
  4. 2 s

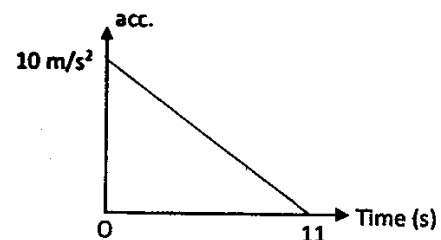
70. In distance time graph of 3 cars A, B and C which car has highest speed and lowest speed.
1. A, C
  2. C, A
  3. A, B
  4. B, A



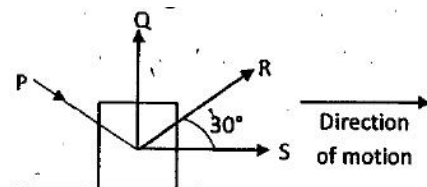
71. A rifle bullet losses  $1/20^{\text{th}}$  of its speed in passing through a plank. The least number of such plank required to stop the bullet is
1. 5
  2. 10
  3. 11
  4. 20

72. Minimum number of unequal forces which can give zero resultant is
1. 2
  2. 3
  3. 4
  4. More than 4

73. A particle starts from rest, its acceleration v/s time graph is shown in figure. The maximum speed of particle will be
1. 110 m/s
  2. 55 m/s
  3. 550 m/s
  4. 660 m/s

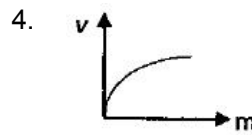
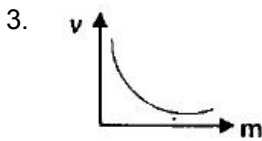
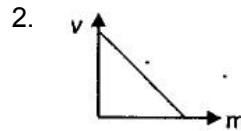
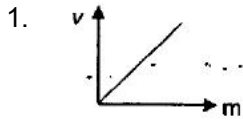


74. Four forces of equal magnitude P, Q, R, S are acting on the object a shown in figure. Which of the following forces does the least work.
1. P
  2. Q
  3. R
  4. S



75. An object is vertically thrown with some velocity and passes through same point after 2 sec and 10 sec respectively, the time at which its velocity becomes zero –
1. 2 sec
  2. 10 sec
  3. 4 sec
  4. 6 sec

76. The graph between velocity ( $v$ ) and mass ( $m$ ) for constant linear momentum is



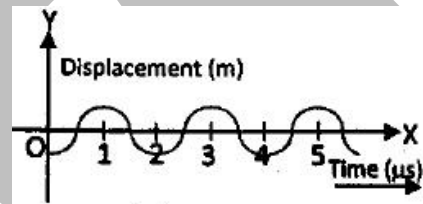
77. A stone is dropped from a certain height which can reach on the ground in 5s. If this stone is stopped after 3s on its fall and is again released, then the total time taken by the stone to reach the ground will be ( $g = 10 \text{ m/s}^2$ )

1. 6 s  
3. 8 s

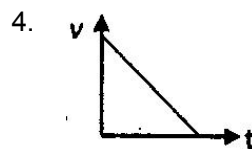
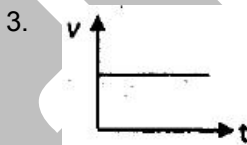
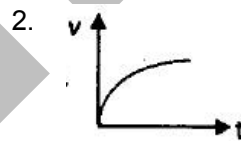
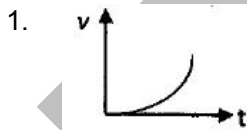
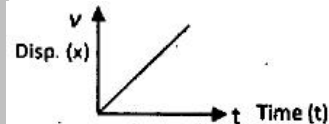
2. 7 s  
4. 9 s

78. Displacement time graph for a sound wave travelling with a velocity of 1500 m/s is given. Find the wavelength of the sound wave

1.  $5 \times 10^{-5} \text{ m}$   
2.  $3 \times 10^{-3} \text{ m}$   
3.  $2 \times 10^{-8} \text{ m}$   
4.  $1.5 \times 10^{-3} \text{ m}$



79. Displacement time graph for an object is given. Its velocity time graph will be



80. The rate of change of momentum per unit area represent

1. Force  
3. Pressure

2. Energy  
4. Power

81. Which of the following works on the principle of conservation of linear momentum?

1. JET  
3. ROCKET

2. AEROPLANE  
4. All of these

82. When the surfaces are coated with lubricant then they

1. Roll upon each other  
3. Stick to each other

2. Slide upon each other  
4. None of these

83. If momentum of a body is increased by 20%. Then its kinetic energy will increase by

1. 48%  
3. 40%

2. 44%  
4. 36%



84. Kepler's II law regarding constancy of areal velocity of a planet is consequence of the law conservation of  
 1. Energy  
 2. Angular momentum  
 3. Linear momentum  
 4. None of these
85. On increasing temperature of iron body gradually its colour becomes  
 1. red  
 2. green  
 3. yellow  
 4. white
86. A beaker is completely filled with water of  $4^{\circ}\text{C}$ . It will overflow if  
 1. heated above  $4^{\circ}\text{C}$   
 2. cooled below  $4^{\circ}\text{C}$   
 3. both heated and cooled above  $4^{\circ}\text{C}$  and below  $4^{\circ}\text{C}$  respectively  
 4. none of the above
87. Time period of single pendulum of a clock is  
 1. 1s  
 2. 2s  
 3. 3s  
 4. 4s
88. If a watch with a wound spring is taken on the moon, then  
 1. shows no change  
 2. does not work  
 3. runs slowly  
 4. runs faster
89. A particle is executing simple harmonic motion with frequency  $\nu$ . The frequency of oscillation of kinetic energy will be  
 1.  $\nu/2$   
 2.  $\nu$   
 3.  $2\nu$   
 4.  $4\nu$
90. A body of mass 50 kg runs up a staircase of 45 steps in 9s. If the height of each step is 15 cm. Power of boy is  
 1. 0.375 Kw  
 2. 3.75 Kw  
 3. 37.5 Kw  
 4. 375 Kw
91. The electronic bulb on long use forms a black coating on its inner surface. The process associated with this is  
 1. melting of tungsten  
 2. sublimation of tungsten  
 3. oxidation of tungsten  
 4. reduction of tungsten
92. The unit of latent heat is  
 1. Joules per kilogram  
 2. Calories per gram per  $^{\circ}\text{C}$   
 3. Ergs per k  
 4. Kilojoules per kilogram per  $^{\circ}\text{K}$
93. Which of the following is not an example of plasma?  
 1. Aurora boreale's (polar lights)  
 2. Fluorescent light bulb  
 3. Neon sign boards  
 4. Incandescent light bulb
94. When a teaspoon of solid sugar is dissolved in a glass of liquid water what phase/phases are present after mixing?  
 1. Liquid only  
 2. Still solid and liquid  
 3. Solid only  
 4. Gas and liquid
95. Which is the most favourable condition of liquefaction of ammonia?  
 1. High pressure, high temperature  
 2. High pressure, low temperature  
 3. Low pressure, low temperature  
 4. Low pressure, high pressure

96. Which of the following has more heat content?  
 1. 10 g of ice at  $0^{\circ}\text{C}$   
 2. 10 g of water at  $0^{\circ}\text{C}$   
 3. Both have the same  
 4. Can't say
97. If we add common salt to water than its freezing point  
 1. becomes less than  $0^{\circ}\text{C}$   
 2. becomes more than  $0^{\circ}\text{C}$   
 3. remains  $0^{\circ}\text{C}$   
 4. cannot be determined
98. Match column-I with column-II and choose the correct option using the codes given below:

Column - I		Column - II	
(A)	Black ink	(i)	Distillation
(B)	Liquid air	(ii)	Evaporation and crystallization
(C)	Copper sulphate solution in water	(iii)	Fractional distillation
(D)	Acetone	(iv)	Chromatography and water

1. A - (i), B - (ii), C - (iii), D - (iv)  
 2. A - (ii), B - (iii), C - (i), D - (iv)  
 3. A - (iv), B - (i), C - (iii), D - (ii)  
 4. A - (iv), B - (iii), C - (ii), D - (i)
99. A compound  $\text{PQ}_2$  has the following arrangement of electrons:
- 
- The elements P and Q are respectively.
1. N, Cl  
 2. Cl, S  
 3. Q, F  
 4. Na, P
100. The nucleon number of atoms X is 37. It exists as a diatomic molecule  $\text{X}_2$ . One molecule of  $\text{X}_2$  contains 34 protons. How many neutrons are present in the nucleus of atom X?  
 1. 17  
 2. 20  
 3. 21  
 4. 25
101. Which of the following correctly represents 360 g of water?  
 1. 2 moles of  $\text{H}_2\text{O}$   
 2. 0.2 moles of  $\text{H}_2\text{O}$   
 3.  $6.022 \times 10^{23}$  molecules of  $\text{H}_2\text{O}$   
 4.  $1.2044 \times 10^{25}$  molecules of  $\text{H}_2\text{O}$
102. Which of the following contains maximum number of molecules?  
 1. 1 g  $\text{SO}_2$   
 2. 1 g  $\text{NO}_2$   
 3. 1 g  $\text{NH}_3$   
 4. 1 g  $\text{H}_2$
103. What mass of hydrogen and oxygen will be produced on complete electrolysis of 18 g of water?  
 1. 2 g hydrogen and 32 g of oxygen  
 2. 2g hydrogen and 18 g  
 3. 2 g hydrogen and 16 g oxygen  
 4. 12 g hydrogen and 6 g oxygen
104. A sample of  $\text{MgCO}_3$  contains  $3.01 \times 10^{23}$   $\text{Mg}^{2+}$  and  $3.01 \times 10^{23}$   $\text{CO}_3^{2-}$  ions. The mass of sample is  
 1. 45 mg  
 2. 84 g  
 3. 42 g  
 4. 42 mol



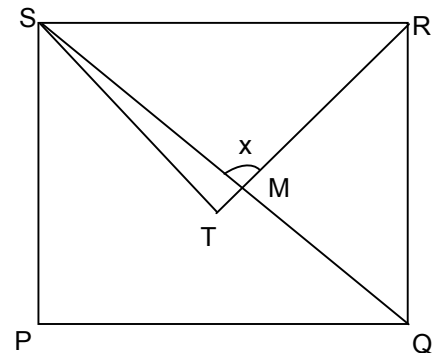
116. Calculate the number of ions present in 5.85 g of NaCl  
 1.  $0.204 \times 10^{23}$  ions  
 2.  $1.204 \times 10^{23}$  ions  
 3.  $6.023 \times 10^{23}$  ions  
 4.  $12.04 \times 10^{23}$  ions
117. Which of the following is purified by sublimation if impurities are non-volatile?  
 1. Cane sugar  
 2. Acetic acid  
 3. Urea  
 4. Naphthalene
118. In the following \_\_\_\_\_ is not polymer.  
 1. sucrose  
 2. enzyme  
 3. starch  
 4. Teflon
119. In carbon disulphide( $\text{CS}_2$ ) the mass of sulphur in combination with 3.0 g carbon is  
 1. 4.6 g  
 2. 6.0 g  
 3. 64.0 g  
 4. 16.0 g
120. \_\_\_\_\_ is a semi conductor.  
 1. Boron  
 2. Copper  
 3. Lead  
 4. Gold
121. Which of the following weighs maximum?  
 1. 0.5 mole of  $\text{H}_2\text{O}$   
 2. 0.5 mole of  $\text{C}_2\text{H}_6$   
 3. 1 mole of  $\text{NH}_3$   
 4. 0.1 mole of  $\text{CO}_2$
122. \_\_\_\_\_ is used for leukaemia.  
 1. Fe - 59  
 2. P - 32  
 3. Co - 60  
 4.  $\text{I}_2$  - 131
123. In  $\text{Fe}_2\text{O}_3$ , Fe is \_\_\_\_\_  
 1. Monovalent  
 2. Bivalent  
 3. Neutral  
 4. Trivalent
124. \_\_\_\_\_ gas evolved when  $\text{M}_n$  react with very dilute  $\text{HNO}_3$   
 1.  $\text{NO}_2$   
 2.  $\text{H}_2$   
 3.  $\text{N}_2\text{O}$   
 4. NO
125. \_\_\_\_\_ alloys is used for welding electrical wires.  
 1. Solder  
 2. German silver  
 3. Stainless steel  
 4. Gun metal
126. Aqua regia is the mixture of conc. HCl and conc.  $\text{HNO}_3$  in the ratio  
 1. 1 : 3  
 2. 2 : 3  
 3. 3 : 1  
 4. 3 : 2
127. \_\_\_\_\_ gas is filled in tyres of aeroplane.  
 1. Neon  
 2. Hydrogen  
 3. Nitrogen  
 4. Helium
128. Which of the following is the correct order of reactivity of metals?  
 1.  $\text{Mg} > \text{Al} > \text{Zn} > \text{Fe}$   
 2.  $\text{Mg} > \text{Zn} > \text{Fe} > \text{Al}$   
 3.  $\text{Al} > \text{Mg} > \text{Zn} > \text{Fe}$   
 4.  $\text{Mg} > \text{Zn} > \text{Al} > \text{Fe}$
129. Electrolysis of water gives  
 1.  $\text{H}^+$  and  $\text{OH}^-$  ions in the solution  
 2.  $\text{H}_2$  gas at anode and  $\text{O}_2$  gas at cathode  
 3.  $\text{O}_2$  gas at anode and  $\text{H}_2$  gas at cathode  
 4.  $\text{H}_2\text{O}(\text{l})$  converted into  $\text{H}_2\text{O}(\text{g})$

130. Antiknocking compound in gasoline is  
1. Triethyl lead  
2. Trimethyl lead  
3. Tetramethyl lead  
4. Tetraethyl lead
131. Which of the following cell organelles do not have double membrane?  
1. Nucleus  
2. Mitochondria  
3. Lysosome  
4. Plastid
132. IR – 36 is improved variety of  
1. Rice  
2. Wheat  
3. Groundnut  
4. Cotton
133. Vaccine of small pox is discovered by  
1. Louis Pasteur  
2. Edward Jenner  
3. Alexander Fleming  
4. Anton Von Leeuwenhock
134. Which of the following plant group is not included in cryptogamae?  
1. Thaliophyta  
2. Gymnosperm  
3. Bryophyta  
4. Pteridophyta
135. Naked seeds are present in  
1. Pinus  
2. Mustard  
3. Mango  
4. Lemon
136. Vector of encephalitis is  
1. Culex  
2. Anopheles  
3. Aedes  
4. Tse tse fly
137. BCG vaccine is given for immunity against  
1. Malaria  
2. Jaundice  
3. Tuberculosis  
4. Hepatitis
138. Starch is stored in  
1. Aleuroplast  
2. Amyloplast  
3. Chromoplast  
4. Chloroplast
139. Which animal is an amphibian:  
1. Salamander  
2. Chameleon  
3. Lizard  
4. Cobra
140. The 'binomial nomenclature' was proposed by:  
1. Aristotle  
2. Carolus Linnaeus  
3. Copeland  
4. Kashyap
141. Companion Cell is a component of:  
1. Parenchyma  
2. Sclerenchyma  
3. Xylem  
4. Phloem
142. Which of the following does not have ability to fix atmospheric nitrogen?  
1. Anabaena  
2. Azotobacter  
3. Nitrosomonas  
4. Rhizobium
143. Intestinal muscles are:  
1. Voluntary and Unstriated  
2. Involuntary and striated  
3. Voluntary and striated  
4. Involuntary and Unstriated

144. Ribosomes are the centre for  
 1. Lipid synthesis  
 2. Protein synthesis  
 3. Photosynthesis  
 4. Respiration
145. In which of the following plant tissues, 'intercellular spaces' are absent:  
 1. Parenchyma  
 2. Choloreenchyma  
 3. Sclerenchyma  
 4. Aerenchyma
146. Unicellular green algae is  
 1. Ulothrix  
 2. Chlamydomonas  
 3. Spirogyra  
 4. Chara
147. 'Haemocoel' is present in:  
 1. Octopus  
 2. Cockroach  
 3. Starfish  
 4. Earthworm
148. The antibiotic penicillin blocks the bacterial process that builds:  
 1. Lysosomes  
 2. Cell membrane  
 3. Cell wall  
 4. Ribosome
149. An organism having characteristic of both plant and animal is:  
 1. Spirogyra  
 2. Amoeba  
 3. Paramecium  
 4. Euglena
150. Slime mould are classified in Kingdom:  
 1. Monera  
 2. Protista  
 3. Fungi  
 4. Plantae
151. Colonial Coelenterate is:  
 1. Coral  
 2. Hydra  
 3. Jellyfish  
 4. Sea anemone
152. Bacteria which can cause acne is:  
 1. Staphylococci  
 2. Methanogens  
 3. Vibrio  
 4. Aceno bacteria
153. Which of the following process occur only in animals?  
 1. Respiration  
 2. Nutrition  
 3. Nervous control  
 4. Hormonal Control
154. Which of the following metal is present in chlorophyll?  
 1. Mg  
 2. Cu  
 3. Zn  
 4. Fe
155. Kala-azar is caused by:  
 1. Nematode  
 2. Virus  
 3. Bacteria  
 4. Protozoan
156. 'World AIDS Day' is celebrated on:  
 1. 2 December  
 2. 2 November  
 3. 4 January  
 4. 1 December
157. 'Water vascular system' for locomotion is found in:  
 1. Jelly fish  
 2. Starfish  
 3. Silver fish  
 4. Octopus

158. Pseudocoelom is found in  
 1. Roundworm  
 2. Liverfluke  
 3. Planaria  
 4. Tapeworm
159. The eukaryotic cell without plastid is found in:  
 1. Blue-green algae  
 2. Bacteria  
 3. Fungi  
 4. Euglena
160. Which cell organelles are capable of forming their own proteins?  
 1. Mitochondria  
 2. Golgi apparatus  
 3. Plastids  
 4. Both (1) and (3)
161. In the following which one is a ciliated protozoan?  
 1. Amoeba  
 2. Paramecium  
 3. Euglena  
 4. Trypanosoma
162. The life supporting zone of the earth is  
 1. Biosphere  
 2. Atmosphere  
 3. Lithosphere  
 4. Hydrosphere
163. Indigenous breed of poultry in India is:  
 1. Leghorn  
 2. Lepra  
 3. Aseel  
 4. Dino
164. Rain water which have dissolved oxides of sulphur and nitrogen, forms  
 1. Water gas  
 2. Pure rain  
 3. Alkaline rain  
 4. Acid rain
165. Gonorrhoea, a sexually transmitted disease is caused by  
 1. Virus  
 2. Protozoan  
 3. Bacteria  
 4. Fungus
166. In which of the following animals, cutaneous respiration occurs;  
 1. Rabbit  
 2. Cockroach  
 3. Tortoise  
 4. Earthworm
167. 2, 4-D chemical is used as:  
 1. Weedicide  
 2. Insecticide  
 3. Fungicide  
 4. Fertilizer
168. Chemical responsible for ozone depletion is:  
 1. DDT  
 2. CFCs  
 3. BHC  
 4. CO<sub>2</sub>
169. Which of the following is egg laying mammal?  
 1. Kangaroo  
 2. Echidna  
 3. Whale  
 4. Bat
170. In the following which is a fungal disease?  
 1. Malaria  
 2. Tetanus  
 3. Ringworm  
 4. Leprosy
171. If  $x = \frac{\sqrt{3} + 1}{\sqrt{3} - 1} + \frac{\sqrt{3} - 1}{\sqrt{3} + 1} + \frac{\sqrt{3} - 2}{\sqrt{3} + 2}$  then the value of  $x^2 + \left(\frac{39}{x}\right)^2$  is  
 1. 104  
 2. 114  
 3. 124  
 4. 144

172. If  $\frac{a}{b} + \frac{b}{a} = 1$ , ( $a, b \neq 0$ ) then the value of  $a^3 + b^3$  is  
 1. 1  
 2. -1  
 3. 0  
 4. 2
173. The value of  $\sqrt{2+\sqrt{3}} + \sqrt{2-\sqrt{3}}$  is  
 1.  $8\sqrt{3}$   
 2.  $2\sqrt{3}$   
 3.  $3\sqrt{2}$   
 4.  $\sqrt{6}$
174. If one angle of a triangle is  $130^\circ$ , then the angle between the angle bisectors of the other two angles is  
 1.  $145^\circ$   
 2.  $155^\circ$   
 3.  $135^\circ$   
 4.  $95^\circ$
175. If  $4^x - 4^{x-1} = 24$ , then  $(2x)^x$  equals  
 1.  $5\sqrt{5}$   
 2.  $\sqrt{5}$   
 3.  $25\sqrt{5}$   
 4. 125
176. If  $\frac{(2.3)^3 - (0.027)}{(2.3)^2 + 0.69 + 0.09} = K$ , then the value of k is  
 1. 2.273  
 2. 2.327  
 3. 2  
 4. 3
177. If  $(3x - 1)^7 = a_7x^7 + a_6x^6 + a_5x^5 + \dots + a_1x + a_0$ , then the value of  $(a_7 + a_6 + a_5 + \dots + a_1 + a_0)$  is  
 1. 128  
 2. 64  
 3. 0  
 4. 32
178. If  $a : b = 2 : 3$ ,  $x : y = 3 : 4$  then the value of  $\frac{25by - 2ax}{3ay + 4bx}$  is  
 1. 5 : 24  
 2. 24 : 5  
 3. 1 : 2  
 4. 2 : 1
179. If  $x^3 - 3x^2 + 3x + 7 = (x+1)(ax^2 + bx + c)$ , then value of  $(a + b + c)$  is  
 1. 4  
 2. 12  
 3. -10  
 4. 3
180. In the given figure, PQRS is a square. RST is an equilateral triangle, then the value of x is  
 1.  $60^\circ$   
 2.  $75^\circ$   
 3.  $45^\circ$   
 4.  $80^\circ$

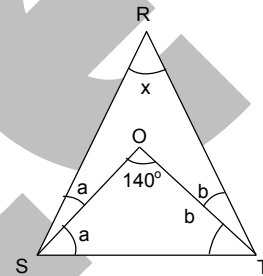




181. One angle of a pentagon is  $140^\circ$ . If the remaining angles are in the ratio  $1 : 2 : 3 : 4$ , then the greatest angle is
1.  $160^\circ$
  2.  $170^\circ$
  3.  $140^\circ$
  4.  $150^\circ$
182. If the mean of age of 18 students of a class is 14.5 years, two more students of ages 15 years and 16 years join the class, then the new mean of age is
1. 14 years
  2. 14.6 years
  3. 14.5 years
  4. 14.7 years

183. The value of  $\sqrt{42 + \sqrt{42 + \sqrt{42 + \dots \infty}}}$  is
1. 9
  2. 8
  3. 6
  4. 7

184. In the given triangle RST, the value of  $x$  is
1.  $40^\circ$
  2.  $90^\circ$
  3.  $80^\circ$
  4.  $100^\circ$

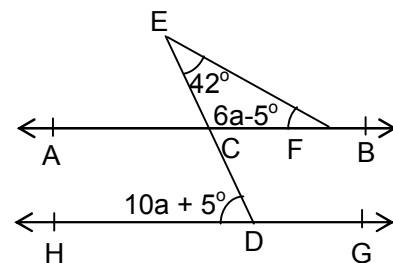


185. If the cost price of 25 articles is equal to the selling price of 20 articles, the gain percent is
1. 20%
  2. 25%
  3. 5%
  4. 10%

186. The value of  $0.\overline{272} + 0.\overline{1363}$  is
1.  $\frac{3}{22}$
  2.  $\frac{41}{100}$
  3.  $\frac{1}{2}$
  4.  $\frac{9}{22}$

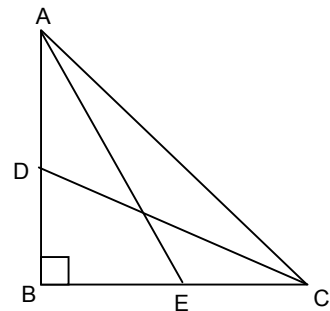
187. If  $a = 2 + \sqrt{3}$ , then the value of  $\left(a - \frac{1}{a}\right)$  is
1. 0
  2.  $2 + \sqrt{3}$
  3. 4
  4.  $2\sqrt{3}$

188. In the given figure,  $AB \parallel HG$  then the value of 'a' is
1. 8
  2. 9
  3. 7.5
  4. 10



189. If one factor of  $(x^4 + x^2 - 20)$  is  $(x^2 + 5)$ . The other factor is
1.  $x^2 - 4$
  2.  $x^2 + 4$
  3.  $x - 4$
  4.  $x + 20$

190. If  $x = 7 + 4\sqrt{3}$  and  $xy = 1$ , then  $\left(\frac{1}{x^2} + \frac{1}{y^2}\right)$  is
1. 64
  2. 134
  3. 194
  4. 149
191. If  $5^{2m-1} = 25^{m-1} + 100$ , then the value of  $3^{2+m}$  is
1. 27
  2. 81
  3. 9
  4. 343
192. If 5 coins are tossed together, what will be the probability of getting atleast 2 Heads?
1.  $\frac{1}{32}$
  2.  $\frac{3}{16}$
  3.  $\frac{13}{16}$
  4.  $\frac{5}{18}$
193. If  $\frac{3\sqrt{2} + 2\sqrt{3}}{5\sqrt{2} - 4\sqrt{3}} = x + y\sqrt{6}$ , then the value of  $(x - y)$  is
1. 16
  2. 38
  3. 22
  4. 21
194. If  $p + q + r = 0$ , then the value of  $\frac{(q+r)^2}{qr} + \frac{(r+p)^2}{rp} + \frac{(p+q)^2}{pq}$  is
1. 0
  2. 1
  3. 2
  4. 3
195. If  $2l - m + n = 0$ , then the value of  $4l^2 - m^2 + n^2 + 4ln$  is
1. 1
  2. -1
  3. 0
  4. 2
196. If  $m^2 + \frac{1}{25m^2} = 8\frac{3}{5}$ , then the value of  $m^3 + \frac{1}{125m^3}$  is
1.  $50\frac{1}{5}$
  2.  $25\frac{1}{5}$
  3.  $12\frac{1}{5}$
  4.  $15\frac{1}{5}$
197. The cost price of a bag and a book is Rs. 371. If the bag costs 12% more than the book, then cost price of bag is
1. Rs. 175
  2. Rs. 196
  3. Rs. 150
  4. Rs. 221
198. In the given figure,  $AE = DC = 13$  cm,  $BE = 5$  cm,  $\angle ABC = 90^\circ$  and  $AD = EC$ , then length of AD is
1. 5 cm
  2. 6 cm
  3. 7 cm
  4. 12 cm



199. Two dice are rolled, then probability of getting a total of 9 is

1.  $\frac{1}{3}$   
3.  $\frac{9}{10}$

2.  $\frac{1}{9}$   
4.  $\frac{8}{9}$

200. If  $A : B : C = 2 : 3 : 4$  and  $A^2 + B^2 + C^2 = 11600$ , then the value of  $(A - B + C)$  is

1. 20  
3. 60

2. 24  
4. 100

