



**JUNIOR SCIENCE TALENT SEARCH EXAMINATION (JSTSE) 2019 – 20
(For Class – IX)**

Held on December 15, 2019

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

1. In VVPAT 'A' stands for
 1. Auction
 2. Audit
 3. Augmentation
 4. Apply
2. What is the vote percentage for General Loksabha Election 2019?
 1. 76.42%
 2. 67.11%
 3. 64.15%
 4. 69.21%
3. The worlds' first human rights TV Channel has been launched in which of the following cities?
 1. New Delhi
 2. New York
 3. London
 4. Tokyo
4. Which one of the following statements is incorrect about the different generations of mobile communication?
 1. Only one subscriber at any given time is assigned a channel in the first generation (1G)
 2. In second generation (2G) mobile communication, 5MHz multi-carrier system is used.
 3. For third generation (3G) voice call and data is an important feature.
 4. Global roaming across multiple networks and multimedia is provided to users at any time and anywhere at a much higher speed in Fourth Generation (4G) mobile communication.
5. Which of the following day is observed as International Day for zero tolerance for Female Genital Mutilation?
 1. 6 February
 2. 31 January
 3. 14 March
 4. 14 February
6. Who among the following is considered as the 'Father of Artificial Intelligence'?
 1. Charles Babbage
 2. Lee De Forest
 3. John Mc Carthy
 4. Microsoft
7. What was the name of the first newspaper to announce the partition of Bengal on July 6th 1905?
 1. Swaraj
 2. Sanjivani
 3. Kalantar
 4. Anand Bazar Patrika
8. The 'Independence of Judiciary' in Indian Constitution is taken from:
 1. Britain
 2. America
 3. South Africa
 4. Australia
9. Uranium found in 'Ladakh' is an example of which resource:
 1. Actual resource
 2. Potential resource
 3. Biotic resource
 4. Human made resource

10. 'Teressa Island' is located in which of the following union territories of India?
1. Lakshadweep
2. Puducherry
3. Daman and Diu
4. Andaman and Nicobar
11. Which of the following canal has reduced India's distance from Europe by 7000 km?
1. Suez Canal
2. Eriez Canal
3. Indira Canal
4. Panama Canal
12. The term 'monsoon' is originated from:
1. German
2. Arabic
3. Latin
4. Hindi
13. Which insurance company has recently launched the 'Mosquito Disease Protection Policy'?
1. LIC
2. HDFC-ERGO
3. S.B.I. Life Insurance
4. Bajaj Alliance Insurance
14. Who has been appointed as the first female match referee by ICC?
1. Mary Waldron
2. Shivani Mishra
3. Jacqueline William
4. G.S. Lakshmi
15. Which was the first country to implement GST (Goods and Services Tax)?
1. France
2. United Kingdom
3. Japan
4. Australia
16. Which country has launched the 45-days 'Mt Everest cleaning campaign'?
1. China
2. India
3. Bhutan
4. Nepal
17. The first parliament in the world to declare climate emergency:
1. United Kingdom
2. United State of America
3. Japan
4. Germany
18. The book "Game changer" is the autobiography of:
1. Waqar Younis
2. Javed Miandad
3. Shahid Afridi
4. Imran Khan
19. Where is the headquarters of National centre for good Governance?
1. New Delhi
2. Chennai
3. Dehradun
4. Pune
20. Indian Railways has developed which A1 – powered robot for finding faults in trains?
1. Madad
2. Milap
3. Cris
4. Ustaad
21. In India, how many states share the coastline?
1. 7
2. 8
3. 9
4. 10
22. The world's first floating Nuclear Power Plant has become operational in which country?
1. Russia
2. France
3. Japan
4. United States of America
23. Tropic of cancer passes through which of the following group of Indian states?
1. Gujarat, Madhya Pradesh, Chattisgarh, Manipur
2. Rajasthan, Jharkhand, West Bengal, Mizoram
3. Uttar Pradesh, Madhya Pradesh, Bihar, Jharkhand
4. Maharashtra, Chattisgarh, Orissa, Andhra Pradesh

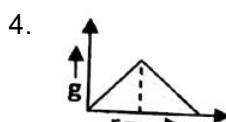
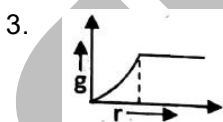
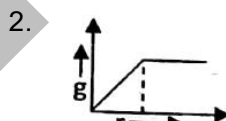
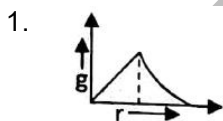
24. Which IIT has successfully converted petroleum waste product, toluene into a useful product benzoic acid?
1. IIT Indore
 2. IIT Kanpur
 3. IIT Madras
 4. IIT Bombay
25. First Indian railway station to get an ISO certification from the National Green Tribunal–
1. Guwahati
 2. Delhi
 3. Hyderabad
 4. Bhopal
26. India's longest suspension bridge built in Leh by Indian Army:
1. Gagar Bridge
 2. Mahatma Bridge
 3. Sardar Bridge
 4. Maitri Bridge
27. Which of the following sport has / have been recommended by International Olympic Committee (IOC) for 2024 Paris Olympics?
1. Break dance
 2. Skate Boarding
 3. Surfing
 4. All the above
28. United kingdom has issued now, 'black hole' coin in honour of which of the following renowned personalities?
1. Stephan Hawking
 2. Charles Darwin
 3. Tim Berners – Lee
 4. Thomas Edison
29. Dillo Bridge is located in:-
1. Andhra Pradesh
 2. Himachal Pradesh
 3. Uttar Pradesh
 4. Arunachal Pradesh
30. Who was the first Lieutenant Governor of Delhi?
1. Sundar Lal Khurana
 2. M.C. Pimpurkar
 3. Baleswar Prasad
 4. Aditya Nath Jha
31. Porcine Reproductive and Respiratory Syndrome (PRRS) is related to:-
1. Cow
 2. Pig
 3. Camel
 4. Goat
32. Match the following hot spring locations of India with their states:-
- | | |
|---------------|---------------------|
| 1. Manikaran | A. Himachal Pradesh |
| 2. Bakreshwar | B. Gujarat |
| 3. Unai | C. Patna |
| 4. Rajgir | D. West Bengal |
1. 1–A, 2–D, 3–B, 4–C
 2. 1–A, 2–B, 3–D, 4–C
 3. 1–B, 2–D, 3–C, 4–A
 4. 1–C, 2–A, 3–B, 4–D
33. Which city is called “Zero mile centre” of India?
1. Bhopal
 2. Nagpur
 3. Jabalpur
 4. Indore
34. Which state government has launched ‘Shiksha Setu’ app to ensure a better connectivity with college students?
1. Punjab
 2. Assam
 3. Haryana
 4. Uttar Pradesh

35. Which among the following is not a 'hereditary' disease?
 1. Thalessemia
 2. Color-Blindness
 3. Haemophilia
 4. Leukemia
36. The Sharda Act is related to:-
 1. Upliftment of scheduled tribes
 2. Upliftment of minorities
 3. Child Marriage
 4. Empowerment of women
37. In the Indian Parliamentary system 'Vote on Account' is valid for how many months (except the year of election)?
 1. 2 months
 2. 3 months
 3. 6 months
 4. 9 months
38. What will you call a system of taxation under which the poorer sections are taxed at higher rates than the richer sections?
 1. Progressive tax
 2. Proportional tax
 3. Regressive tax
 4. Degressive tax
39. What is the accounting year of the Reserve Bank of India?
 1. April-March
 2. July-June
 3. October-September
 4. January-December
40. Podu is a form of shifting cultivation in:-
 1. Madhya Pradesh
 2. Nagaland
 3. Manipur
 4. Andhra Pradesh
41. Turpentine oil is obtained from:-
 1. Cashew nut shell
 2. Pine tree
 3. Eucalyptus tree
 4. Banyan tree
42. The yield per unit area is known as:-
 1. Crop concentration
 2. Agriculture Intensity
 3. Agriculture Productivity
 4. None of these
43. In which city of India is Dhamek Stupa located?
 1. Pune
 2. Delhi
 3. Varanasi
 4. Hyderabad
44. India's fastest and first multi-petaflops super computer named Pratyush was unveiled at _____.
 1. Indian Institute of Science, Bangalore
 2. Indian Space Research Organization Bangalore
 3. Indian Institute of Tropical Meteorology, Pune
 4. Indian Institute of Technology, New Delhi
45. Protocol used for sending an email is:-
 1. HTTP
 2. FTP
 3. POP-3
 4. SMTP
46. In Networks, WEP stands for
 1. Wireless Equivalent Privacy
 2. Wired Extra Privacy
 3. Wired Equivalent Privacy
 4. Wireless Embedded privacy
47. The mulberry fruit is:-
 1. Sorosis
 2. Syconus
 3. Samara
 4. Nut

48. Linseed is a rich source of –
 1. Vitamin C
 2. Omega-3 fatty acid
 3. Essential amino acids
 4. Antioxidants
49. White leg-horn is a variety of –
 1. Parrot
 2. Peacock
 3. Fowl
 4. Owl
50. Itai-Itai disease is caused by which metal?
 1. Mercury
 2. Nickel
 3. Cadmium
 4. Lead

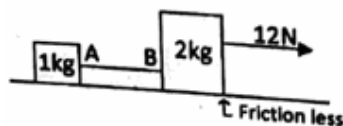
GENERAL SCIENCE & MATHEMATICS (QUESTION NO 51– 200)

51. The instrument used to conduct electrolysis:
 1. Voltmeter
 2. Voltmeter
 3. Ammeter
 4. Electrolyte
52. If the distance between a crest and trough (consecutive) is L then it's wavelength be:
 1. L/2
 2. L
 3. 4L
 4. 2L
53. A particle of mass m at rest is acted upon by a force p for time t. It's kinetic energy after time t is:
 1. p^2t^2/m
 2. $p^2t^2/2m$
 3. $p^2t^2/3m$
 4. $pt/2m$
54. Correct variation of acceleration due to gravity with distance from centre of plane is:
 (R is radius of planet)

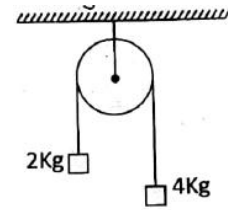


55. A particle of mass m moving with velocity v strikes a stationary particle of mass 2m and sticks to it, the speed of system will be
 1. v/2
 2. 2v
 3. v/3
 4. 3v

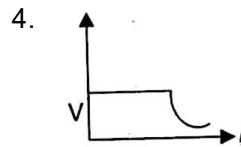
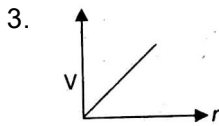
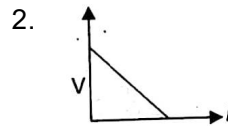
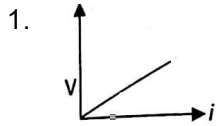
56. Tension in string AB is
 1. 8 N
 2. 4 N
 3. 12 N
 4. None of these



57. For frictionless pulley the acceleration of system will be
1. $10/3 \text{ m/s}^2$
 2. $20/3 \text{ m/s}^2$
 3. $4/9 \text{ m/s}^2$
 4. 6 m/s^2

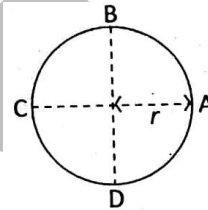


58. Relation between potential difference (V) and current (i) for a cell of emf (E) and internal resistance (r) is, shown graphically. Which graph is correct.



59. Object moves on circular path. Find displacement from $B \rightarrow A$ (r is the radius of circular path)

1. r
2. $2r$
3. $3r$
4. $\sqrt{2} r$



60. On filing a tuning fork, its frequency:

1. Increases
2. Decreases
3. Remain same
4. Increases then decreases

61. The height of mercury which exerts the same pressure as 20 cm of water column is equal to

1. 1.48 cm
2. 14.8 cm
3. 148 cm
4. None of these

62. A block of wood floats $2/3$ of it's volume submerged; its relative density is equal to:

1. $1/3$
2. $2/3$
3. $4/3$
4. $1/9$

63. The gravitational field intensity at a point on surface of earth is: [R is radius of earth]

1. g
2. gR
3. $1/2 gR$
4. Zero

64. Two metallic spheres of same material and of equal radius r are touching each other. The force of attraction F between them is

1. $F \propto r^6$
2. $F \propto r^4$
3. $F \propto r^2$
4. $F \propto r$

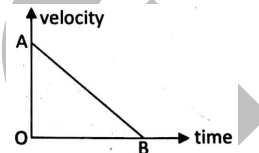
65. A body released from top of tower falls through half of height of tower in 3 sec, it will reach the ground after:

1. 3.5 sec
2. 4.24 sec
3. 4.71 sec
4. 6 sec

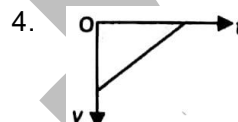
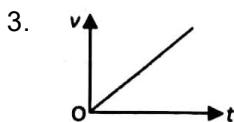
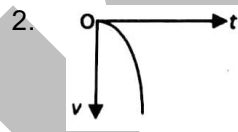
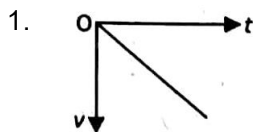
66. If a particle is thrown vertically upwards, then its velocity so that, it covers same distance in 5th and 6th sec would be
1. 48 m/s
 2. 14 m/s
 3. 49 m/s
 4. 7 m/s
67. An object while moving may not have:
1. constant speed but constant velocity
 2. variable velocity but constant speed
 3. non-zero acceleration but constant speed
 4. non-zero acceleration but constant velocity

68. The numerical ratio of average speed to average velocity is
1. Always equal to one
 2. Always less than one
 3. Always more than one
 4. Equal to or more than one

69. The graph represents:
1. Constant -ve acceleration with -ve initial velocity
 2. Constant -ve acceleration with +ve initial velocity
 3. Constant +ve acceleration with -ve initial velocity
 4. Constant +ve acceleration with +ve initial velocity



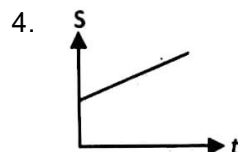
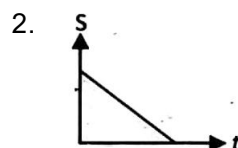
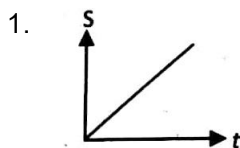
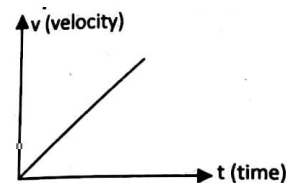
70. Velocity-time graph for free fall of object is:



71. Area under acceleration time graph is equal to
1. Change in acceleration
 2. Velocity
 3. Change in velocity
 4. Displacement

72. If displacement of object is proportional to t^2 (t is time). The acceleration in motion:
1. Constant
 2. Increase with time
 3. Decrease with time
 4. No-relation exist

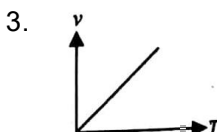
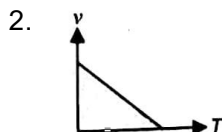
73. Velocity-time graph of an object its given, its displacement time graph will be:



74. When pressure applied on water increases, its boiling point:
 1. Decrease
 2. Increase
 3. Change with decrease in wave length
 4. Change with increase in wavelength

75. On increasing temperature of body its colour:
 1. Changes
 2. No effect
 3. Change with decrease in wavelength
 4. Change with increase in wavelength

76. The graph between frequency (ν) by sources and its time period (T) is



77. The amount of water rises up per minute by a pump of power of 2 KW upto height 10 m
 1. 1200 Kg
 2. 1150 Kg
 3. 1250 Kg
 4. 1225 Kg

78. S.I unit of intensity of sound is
 1. $J m^2 s$
 2. $W m^2$
 3. $J m^{-2} s^{-1}$
 4. $J^{-1} m^{-1} s$

79. A cricketer catches a ball of mass 150 g in 0.1 sec moving with speed 20 m/s. He experiences a force of
 1. 300 N
 2. 30 N
 3. 3 N
 4. 0.3 N

80. Which one is self adjusting force?
 1. Kinetic friction
 2. Static friction
 3. Nuclear force
 4. None

81. When milk is churned cream separates out because of the
 1. cohesive force
 2. gravitational force
 3. frictional force
 4. centrifugal force

82. Work done by a simple pendulum in one complete oscillation is
 1. zero
 2. \sqrt{mg}
 3. $mg \cos\theta$
 4. $mg x$

83. A body of mass m accelerates uniformly from rest to v_1 in time t_1 . The power delivered to the body as a function of time t is
 1. $mv_1 t/t_1$
 2. $mv_1^2 t / t_1^2$
 3. $mv_1 t^2/t_1$
 4. $mv_1^2 t / t_1$

84. Two bodies of mass m and 4 m are moving with equal kinetic energy the ratio of their momenta is
 1. 1: 4
 2. 4:1
 3. 1:2
 4. 1: $\sqrt{2}$

1. 1 → S, 2 → R, 3 → P, 4 → Q
3. 1 → P, 2 → S, 3 → Q, 4 → R
2. 1 → Q, 2 → S, 3 → P, 4 → R
4. 1 → R, 2 → Q, 3 → S, 4 → P
96. Which of the following is correctly matched?
1. Emulsion – Curd
2. Foam – Mist
3. Aerosol – Smoke
4. Solid sol – Cake
97. Which method cannot be used for the purification of liquids?
1. Sublimation
2. Chromatography
3. Distillation
4. Fractional distillation
98. In modern surgery, metal pins are used for holding the broken bones together. These pins are made up of
1. copper
2. stainless steel
3. aluminium
4. brass
99. Which of the following is not a pure substance?
1. Tin
2. Coal
3. Ice
4. Limestone
100. Which of the following solution does not show tyndall effect?
1. Soap solution
2. Starch solution
3. Solution of egg white in water
4. Copper sulphate solution
101. What will be the mass percentage of a solution containing 30 g of common salt in 220 g water?
1. 12%
2. 22%
3. 1.2%
4. 3%
102. Volume occupied by 1 molecule of water (density of water = 1 g cm³) is
1. 6.032×10^{-23} cm³
2. 3.0×10^{-23} cm³
3. 5.5×10^{-23} cm³
4. 9.0×10^{-23} cm³
103. The number of atoms in 0.1 mol of CO₂ gas is
1. 1.8×10^{22}
2. 6.02×10^{22}
3. 3.6×10^{22}
4. 1.8×10^{23}
104. An alkaloid contains 17.28% of nitrogen and its molar mass is 162. The number of nitrogen atoms present in one molecule of alkaloid is
1. 2
2. 4
3. 1
4. 3
105. Number of atoms is 558.6 g Fe (atomic mass of Fe = 55.86 g mol⁻¹) is
1. 6.022×10^{22}
2. twice that in 60 g carbon
3. half that of 8 g He
4. $558.6 \times 6.022 \times 10^{23}$
106. 52u He contains
1. $4 \times 6.022 \times 10^{23}$ atoms
2. 13 atoms
3. $13 \times 6.022 \times 10^{23}$ atoms
4. 4 atom
107. The formula of a metal chloride is MCl₃ then the formula of the phosphate of metal M will be
1. MPO₄
2. M₂PO₄
3. M₃PO₄
4. M₂(PO₄)₃
108. Which of the following particles has the highest value of charge/mass ratio?
1. Electron
2. Alpha particle
3. Neutron
4. Proton

109. The ratio between the number of neutrons in C and Si (atomic mass of C = 12 and Si = 28)
1. 2 : 3
 2. 3 : 2
 3. 3 : 7
 4. 7 : 3
110. If A has 9 protons, 9 electrons and 10 neutrons, B has 12 protons, 12 electrons and 12 neutrons. Formula of the compound between A and B is
1. B_2A_3
 2. AB_2
 3. BA_2
 4. AB_4
111. The average atomic mass of an element 'A' is 16.2 u. There are two isotopes $^{16}_8A$ and $^{18}_8A$ of the element. The percentage of these two isotopes in element 'A' are respectively
1. 10%, 90%
 2. 90%, 10%
 3. 20%, 80%
 4. 80%, 20%
112. Alum helps to purify the muddy water by:
1. Absorption
 2. Dialysis
 3. Precipitation
 4. Coagulation
113. _____ polymer is used for making nonstick utensils.
1. Teflon
 2. PVC
 3. PAN
 4. Buna-S
114. Solder is an alloy of:
1. Sn and Zn
 2. Al and Pb
 3. Pb and Sn
 4. Pb and Zn
115. On heating lead nitrate brown gas obtained is:
1. N_2O
 2. NO
 3. N_2O_5
 4. NO_2
116. After white washing, formation of _____ substance gives shiny finish to the walls.
1. Quick lime
 2. Lime stone
 3. Slaked lime
 4. Calcium
117. Formula of compound used for supporting fractured bones is:
1. $2 CaSO_4 \cdot H_2O$
 2. $CaSO_4 \cdot H_2O$
 3. $CaSO_4 \cdot \frac{3}{2} H_2O$
 4. $2 CuSO_4 \cdot 5H_2O$
118. Antirust solutions are:
1. Neutral
 2. Alkaline
 3. Acidic
 4. Amphoteric
119. _____ isotope is used to detect blood clot.
1. Co – 60
 2. I – 131
 3. Na – 24
 4. As – 74
120. The latent heat of vaporization of water is:
1. $2.25 \times 10^5 J/Kg$
 2. $225 \times 10^5 J/Kg$
 3. $0.225 \times 10^5 J/Kg$
 4. $22.5 \times 10^5 J/Kg$
121. The number of atoms present in 4.25 g of NH_3 is
1. 1×10^{23}
 2. 6.0×10^{23}
 3. 2.0×10^{23}
 4. 4.0×10^{23}

122. Metal ion present in oxygenated haemoglobin
 1. Fe^{3+} 2. Fe^{2+}
 3. Co^{2+} 4. Mg^{2+}
123. How many moles of iron can be made from Fe_2O_3 by the use of 16 mol of CO in the given reaction?
 $\text{Fe}_2\text{O}_3 + 3 \text{CO} \rightarrow 2\text{Fe} + 3\text{CO}_2$
 1. 1.67 mol 2. 10.67 mol
 3. 2.0 mol 4. 3.0 mol
124. In the given reaction $\text{Al}_2\text{O}_3 + 3 \text{Mg} \rightarrow 3 \text{MgO} + 2 \text{Al}$, Mg is used as:
 1. oxidant 2. catalyst
 3. dehydrating agent 4. reductant
125. If the density of water is 1.0 g cm^{-3} and that of water vapour is 0.0006 g cm^{-3} at 100°C and 1 atm, then the volume occupied by water molecules in 1 litre of steam at this temperature and pressure is:
 1. 0.6 cm^3 2. 6.0 cm^3
 3. 60.0 cm^3 4. 0.06 cm^3
126. Which of the following has more electrons than neutrons?
 1. ${}^{19}_9\text{F}^-$ 2. ${}^{26}_{13}\text{Al}^{3+}$
 3. ${}^{16}_8\text{O}^{2-}$ 4. ${}^{23}_{11}\text{Na}^+$
127. _____ is a molecular crystal.
 1. Dry ice 2. Quartz
 3. Rock salt 4. Diamond
128. Atomicity of sulphur is:
 1. 2 2. 8
 3. 4 4. 1
129. Which of the following metal can displace H_2 gas from an acid?
 1. Pt 2. Cu
 3. Ag 4. Ni
130. Dissolution of NH_4Cl in water is an:
 1. Neutralization reaction 2. Exothermic reaction
 3. Endothermic reaction 4. Precipitation reaction
131. In which of the following organism self fertilization is observed:
 1. Rohu 2. Round worm
 3. Earthworm 4. Liver fluke
132. Flame cells are excretory organism
 1. Flat worms 2. Earth worms
 3. Glow worms 4. Round worms
133. The husk of coconut is made up of
 1. Collenchyma cells 2. Parenchyma
 3. Aerenchyma 4. Sclerenchyma
134. Which of the following has pseudocoelom?
 1. Flat worm 2. Round worm
 3. Earth worm 4. Tape worm

135. Which of the following is an insecticide?
1. Penicillin
2. BHC
3. 2-4D
4. IAA
136. Vacuolar membrane is called:
1. Plasma membrane
2. Tonoplast
3. Turgid membrane
4. Chromoplast
137. Murrah is a high yielding breed of
1. Cow
2. Hen
3. Buffalo
4. Sheep
138. Secretion of enzymes, mucous and hormones is done by
1. Golgi apparatus
2. Mitochondria
3. Ribosomes
4. Plastids
139. Both B & T cells of immune system are produced in
1. Spleen
2. Bone marrow
3. Lymphoid organ
4. Thymus
140. The third kingdom added in Haeckel's system of classification was
1. Protista
2. Monera
3. Fungi
4. Archaea
141. Entamoeba gingivalis lives in
1. Intestine
2. Colon
3. Pus pocket of pyorrhea
4. Stomach
142. Lichen are important in studies on atmospheric pollution because they
1. can grow in highly polluted atmosphere
2. sensitive to pollutants like SO₂
3. efficiently purify the atmosphere
4. uses SO₂ grow
143. Which of the following cell will burst when placed in hypotonic media?
1. Onion peel cell
2. Fungal cell
3. E. coli
4. Red blood cell
144. Haemoglobin is dissolved in plasma in
1. Earthworm
2. Ascaris
3. Tape worm
4. Insect
145. A river with high BOD value is
1. highly polluted
2. highly clean
3. highly productive
4. none of these
146. Which muscle cells get tired soon?
1. skeletal muscle
2. cardiac muscle
3. smooth muscle
4. all of these
147. Prokaryotic cells do not have
1. Lysosomes
2. Plasma membrane
3. Nucleoid
4. Ribosome

148. The test tubes A, B, C are taken with good material sample of rice, mustard and dal respectively in powdered form. On adding iodine solution the black colour is observed in
1. Test tube – A
 2. Test tube – B
 3. Test tube – C
 4. Test tube – D

149. How does protoplasm differs from cytoplasm?
1. Cytoplasm & protoplasm are parts of nucleus
 2. Protoplasm includes nucleus and cytoplasm
 3. Protoplasm is same as cytoplasm
 4. Protoplasm is a part of cytoplasm

150. Which is not a postulate of cell theory?
1. All cells rise from pre-existing cells
 2. Cell is the basic unit of life
 3. The fluid substance of the cell is protoplasm
 4. All organisms are composed of cells

151. Match the items of column 'A' with Column 'B'.

Column – A			Column – B	
(a)	Tendon	(i)	Yellow fibre	
(b)	Ligament	(ii)	White fibre	
(c)	Cartilage	(iii)	Osteocytes	
(d)	Bone	(iv)	Chondriocytes	

1. a → (i); b → (ii); c → (iii); d → (iv)
2. a → (iv); b → (iii); c → (ii); d → (i)
3. a → (ii); b → (i); c → (iv); d → (iii)
4. a → (iii); b → (iv); c → (i); d → (ii)

152. The principal cereal crop of India is:
1. Wheat
 2. Maize
 3. Sorghum
 4. Rice

153. Animal husbandry is the scientific management of:
- (i) animal breeding
 - (ii) culture of animals
 - (iii) animal live stock
 - (iv) rearing of animals
1. (i), (ii) and (iii)
 2. (i), (iii) and (iv)
 3. (ii), (iii) and (iv)
 4. (i), (ii) and (iv)

154. Who is known as the father of white revolution in India?
1. Prof. M.S. Swaminathan
 2. Dr. V. Kurien
 3. Dr. Yashpal
 4. Mrs. Indira nancy

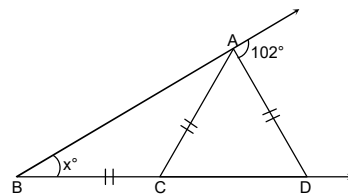
155. Ozone is
1. Poisonous
 2. Sweet
 3. Not harmful
 4. Nothing

156. Ipomoea is a
1. Dicot
 2. Monocot
 3. Algae
 4. Moss

157. Cotton chemically consists of
 1. cellulose
 2. protein
 3. nuclein
 4. pectin
158. Chara belongs to
 1. Thallophyta
 2. Gymnosperms
 3. Angiosperms
 4. Dicot
159. Exocoetus is a
 1. Flying fish
 2. Lion fish
 3. Dog fish
 4. Angles fish
160. _____ helps the body parts together and helps the body move.
 1. Muscular system
 2. Skeletal system
 3. Musculoskeletal system
 4. Respiratory system
161. _____ is major factor in deciding the soil structure.
 1. Fertilizers
 2. Roots
 3. Humus
 4. Pesticides
162. Lichens are very sensitive to _____ in the air.
 1. CO₂
 2. NH₃
 3. SO₂
 4. NO₂
163. When a cell divides by meiosis it produces _____ new cells.
 1. Two
 2. Three
 3. Four
 4. One
164. Peptic ulcers is related to
 1. Helicobacter pylori
 2. Trypanosoma
 3. Leishmania
 4. Viruses
165. Leghorn is related to
 1. Poultry
 2. Apiculture
 3. Dairy Farming
 4. Pisciculture
166. Which is responsible for the increase of the stem in growth?
 1. Cortex
 2. Xylem
 3. Cambium
 4. Phloem
167. Stomata open at night in
 1. Hydrophytes
 2. Halophytes
 3. Mesophytes
 4. Succulent
168. Haversian canal occurs in
 1. Humerus
 2. Scapula
 3. Clavicle
 4. Pubis
169. Hardness and stiffness in plants because of the _____ tissue
 1. Parenchyma
 2. Sclerenchyma
 3. Aerenchyma
 4. Collenchyma
170. Viruses are _____ particles
 1. Nucleoprotein
 2. Carboprotein
 3. Mucocasbo
 4. Proteinomuco

171. If $\left(\frac{x+1}{x+3}\right)^3 = \frac{x-1}{x+5}$, then the value of x is
1. 2
 2. -2
 3. 1
 4. -1
172. Value of $\frac{1}{2+\sqrt{3}-2\sqrt{2}} + \frac{3}{2+\sqrt{3}+2\sqrt{2}}$ is
1. $\frac{4}{47}[9\sqrt{3}-4\sqrt{6}-\sqrt{2}+14]$
 2. $\frac{4}{47}[9\sqrt{3}+4\sqrt{6}-\sqrt{2}+14]$
 3. $\frac{4}{47}[9\sqrt{3}-4\sqrt{6}-\sqrt{2}-14]$
 4. $\frac{4}{47}[9\sqrt{3}+4\sqrt{6}+\sqrt{2}+14]$
173. If $x = \frac{5\sqrt{21}}{\sqrt{3}+\sqrt{7}}$, then the value of $\frac{x+5\sqrt{7}}{x-5\sqrt{7}} - \frac{x+5\sqrt{3}}{x-5\sqrt{3}}$ is
1. 2
 2. $\sqrt{21}$
 3. $\frac{8}{\sqrt{21}}$
 4. $\frac{4}{\sqrt{21}}$
174. If the polynomials $p(x) = 4x^3 - ax^2 + 2x - 1$ and $q(x) = 3x^3 - 7x^2 - 8x + a$ leave the same remainder, when divided by $(x-1)$, then the value of
1. 1
 2. $\frac{1}{2}$
 3. $\frac{3}{2}$
 4. $\frac{-3}{2}$
175. Factors of $6x^2 - 5xy - 4y^2 + x + 17y - 15$
1. $(2x + y - 3)(3x - 4y + 5)$
 2. $(2x - y - 3)(3x - 4y - 5)$
 3. $(2x - y - 3)(3x + 4y + 5)$
 4. $(2x + y + 3)(3x + 4y - 5)$
176. If $x = \sqrt[3]{28}$ and $y = \sqrt[3]{27}$ then value of $x + y - \frac{1}{x^2 + xy + y^2}$ is
1. 8
 2. 7
 3. 6
 4. 5
177. The value of $0.\overline{2} + 0.\overline{23}$ is
1. $0.\overline{43}$
 2. $0.\overline{43}$
 3. $0.\overline{45}$
 4. $0.\overline{45}$
178. If x, y and z are real and $(x-2)^2 + (y-3)^2 + (z-4)^2 = 0$, then the value of $xy + yz + zx$ is
1. 24
 2. 26
 3. 28
 4. 30
179. If $p^2 - 3p - 1 = 0$, then the value of $p^2 + \frac{1}{p^2}$ is
1. 7
 2. 9
 3. 11
 4. 13

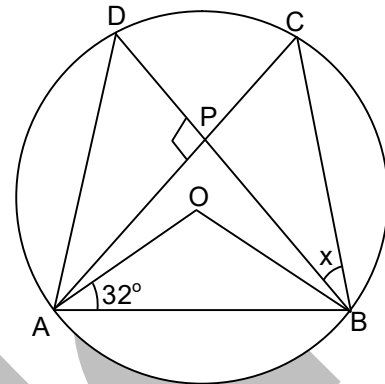
180. If $m + n = 7$ and $m^3 + n^3 = 133$, then the value of $m^2 + n^2$ is
 1. 29
 2. 49
 3. 69
 4. 59
181. If $x + y = \sqrt{3}$, $x - y = \sqrt{2}$ then the expression $8xy(x^2 + y^2)$ has the value
 1. $5\sqrt{2}$
 2. $10\sqrt{2}$
 3. 20
 4. 5
182. Factors of $(3x^2 - 2x)(6 - 3x^2 + 2x) - 5$ are
 1. $(x - 1)(x + 1)(1 + 3x)(5 - 3x)$
 2. $(x - 1)(x + 1)(1 + 3x)(5 + 3x)$
 3. $(x - 1)(x + 1)(1 - 3x)(3 + 5x)$
 4. $(x - 1)(x + 1)(3 - x)(5 - 3x)$
183. If $m = 2p + \sqrt{p^2 + k}$, then k in terms of p and m is
 1. $(m + p)(m + 3p)$
 2. $(m + p)(m - 3p)$
 3. $(m - 2p)(m - 3p)$
 4. $(m - p)(m - 3p)$
184. If $p - x = 1$ and $\frac{3x + 2}{5} + \frac{3}{2} = \frac{4p - 3}{2}$, then the value of x is
 1. 1
 2. -1
 3. 0
 4. 2
185. If $5^{2m-1} = 25^{m-1} + 100$, then the value of 6^{-m} is
 1. 6
 2. 36
 3. $\frac{1}{6}$
 4. $\frac{1}{36}$
186. If $x = 3 + 3^{1/3} + 3^{2/3}$, then the value of $x^3 - 9x^2 + 18x - 10$ is
 1. -1
 2. 0
 3. 1
 4. 2
187. If $a + b + c = 2$, $ab + bc + ca = -1$ and $abc = -2$, then the value of $a^3 + b^3 + c^3$ is
 1. -8
 2. 0
 3. 8
 4. 16
188. The coefficient of x^2 in $(x + 3)(x - 5)(x + 7)$ is
 1. 28
 2. -28
 3. -5
 4. 5
189. In figure, $AD = AC = CB$ then the value of x is
 1. 51°
 2. 78°
 3. 34°
 4. 43°



190. If $(\sqrt{32})^m \div 2^{n+1} = 1$ and $16^{4-\frac{m}{2}} - 8^n = 0$, then the value of m and n are
1. $m = 2, n = 4$
 2. $m = 2, n = 3$
 3. $m = 4, n = 2$
 4. $m = 3, n = 2$

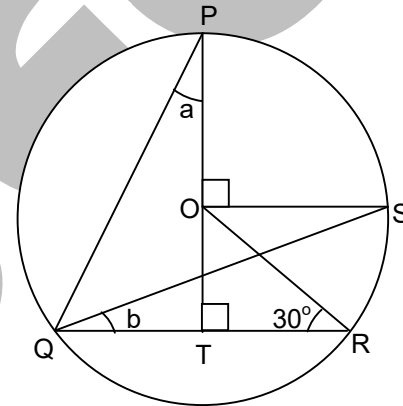
191. In figure, 'O' be the centre of the circle,
 $\angle OAB = 32^\circ, \angle APD = 90^\circ$ then the value of x is

1. 30°
2. 32°
3. 34°
4. 36°



192. In figure, 'O' is the centre of the circle $\angle QRO = 30^\circ$, values of a and b are

1. $a = 30^\circ, b = 30^\circ$
2. $a = 15^\circ, b = 15^\circ$
3. $a = 15^\circ, b = 30^\circ$
4. $a = 30^\circ, b = 15^\circ$



193. If volume of a cube is L cubic units, its surface area is M square units and length of the diagonal is N unit, then

1. $6L = MN$
2. $6\sqrt{3}L = MN$
3. $\sqrt{3}M = LN$
4. $6N = LM$

194. In a triangle, the average of any two sides is 6 cm more than half of third side, then area of the triangle (in sq. cm). is

1. $64\sqrt{3}$
2. $48\sqrt{3}$
3. $72\sqrt{3}$
4. $36\sqrt{3}$

195. The area of circular ring enclosed between two concentric circles is 286 cm^2 . If the difference of their radii is 7 cm, then the radii of these circles are

1. 2 cm and 9 cm
2. 5 cm and 12 cm
3. 4 cm and 11 cm
4. 3 cm and 10 cm

196. If $49^x - 49^{x-1} = 16464$, then which of the following is equivalent of $(2x)^x$?

1. $(5)^{5/2}$
2. $(7)^{7/2}$
3. $(3)^{3/2}$
4. None of these

197. The ratio of the volume of a cube to that of a sphere which will fit inside the sphere is
1. $\sqrt{3}\pi : 2$
 2. $2 : \sqrt{3}\pi$
 3. $3 : \sqrt{2}\pi$
 4. None of these
198. The value of $\sqrt[3]{20 + 14\sqrt{2}} + \sqrt[3]{20 - 14\sqrt{2}}$ is
1. 4
 2. 6
 3. 8
 4. 10
199. If $m + \frac{1}{m} = 5$, then the value of $\frac{m^4 + 3m^3 + 5m^2 + 3m + 1}{m^4 + 1}$ is
1. $\frac{47}{21}$
 2. $\frac{45}{21}$
 3. $\frac{43}{23}$
 4. $\frac{41}{23}$
200. If $X : Y : Z = 4 : 3 : 2$ and $x^2 + y^2 + z^2 = 11600$, then the value of $\sqrt{X + Y - Z}$ is
1. 10
 2. 100
 3. 180
 4. 60