FIITJEE

(JSTSE PAPER QUESTIONS)
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 15th 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 21st 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. Delhi
   4. Kolkata

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. Bhawna Kanth
    4. Avani Chaturvedi

14. In which Indian state, the Nipah virus outbreak was first detected?
    1. Kerela
    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.

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 free state
   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 Resrve (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. Monka 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 11 days later 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 than 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 a boiled 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. 11th 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. Jelepla
   3. Bomdila  
   4. Diphu

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 :-

   1. [Graph 1]
   2. [Graph 2]
   3. [Graph 3]
   4. [Graph 4]
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 : 2
2. 1 : 2 : 3 : 4
3. 1 : 1 : 1 : 13
4. 1 : 3 : 5 : 7

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

1. \[ T = \text{constant} \]
2. \[ T \propto H \]
3. \[ T \propto H^2 \]
4. \[ T \propto \sqrt{H} \]

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° 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 g rolling on a floor is given, the frictional force of the floor on the ball will be:

![Time vs. Velocity Graph]

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 the ball bounce back.

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

63. A submarine emits a sonar pulse which returns 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 \( t \)th and \( (1+1) \)th second is 100 cm. Then its velocity after \( t \) second in cm/s is

1. 20
2. 30
3. 50
4. 80

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 m/s²
2. 285 m/s²
3. 338 m/s²
4. 564 m/s²

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 125m height into a pond which is at bottom of tower. When will the splash be heard at top. (g = 10 m/s², 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.

   Distance(x) vs Time(t)

   1. A, C  
   2. C, A  
   3. A, B  
   4. B, A

71. A rifle bullet loses \( \frac{1}{20} \) of its speed in passing through a plank. The least number of such planks 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.

   [Graph showing acceleration vs time]

   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 an object as shown in figure. Which of the following forces does the least work.

   [Graph showing forces and direction of motion]
75. An object is vertically thrown with some velocity and passes through the 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

1.  
2.  
3.  
4.  

77. A stone is dropped from a certain height which can reach the ground in 5 s. If this stone is stopped after 3 s 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  
2. 7 s  
3. 8 s  
4. 9 s

78. Displacement-time graph for a sound wave traveling 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. \( 2 \times 10^{-6} \text{ m} \)  
4. \( 1.5 \times 10^{-3} \text{ m} \)
79. Displacement time graph for an object is given. Its velocity time graph will be

\[ v \]
\[ \text{Disp.}(x) \]
\[ \text{Time}(t) \]

1. 

\[ v \]
\[ \text{Time}(t) \]

2. 

\[ v \]
\[ \text{Time}(t) \]

3. 

\[ v \]
\[ \text{Time}(t) \]

4. 

80. The rate of change of momentum per unit area represent.
1. Force
2. Energy
3. Pressure
4. Power

81. Which of the following works on the principle of conservation of linear momentum -
1. JET
2. AEROPLANE
3. ROCKET
4. All of these

82. When the surfaces are coated with lubricant then they -
1. Roll upon each other
2. Slide upon each other
3. Stick to 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%
2. 44%
3. 40%
4. 36%

84. Kepler’s II law regarding constancy of areal velocity of a planet is consequence of the law of conservation of
1. Energy
2. Angular momentum
3. Linear momentum
4. None of these

85. On increasing the 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°C. It will overflow if
1. heated above 4°C
2. Cooled below 4°C
3. Both heated and cooled above 4°C and below 4°C respectively
4. None of the above

87. Time period of simple 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 it
   1. Show no change
   2. Does not work
   3. Runs slowly
   4. Runs faster

89. A particle is executing simple harmonic motion with frequency \( v \). The frequency of oscillation of kinetic energy will be
   1. \( v \)
   2. \( \frac{v}{2} \)
   3. \( 2v \)
   4. \( 4v \)

90. A boy 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 °C
   3. Ergs per k
   4. Kilojoules per kilogram per °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 temperature

96. Which of the following has more heat content
   1. 10 g of ice at 0°C
   2. 10 g of water at 0°C
   3. Both have the same
   4. Can’t say

97. If we add common salt to water then its freezing point
   1. becomes less than 0°C
   2. becomes more than 0°C
   3. remains 0°C
   4. can not be determined

98. Match column I with column II and choose the correct option using the codes given below

<table>
<thead>
<tr>
<th>Column I</th>
<th>Column I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mixture</td>
<td>Separation technique</td>
</tr>
<tr>
<td>a) Black ink</td>
<td>i) Distillation</td>
</tr>
<tr>
<td>b) Liquid Air</td>
<td>ii) Evaporation and crystallization</td>
</tr>
<tr>
<td>c) Copper sulphate solution in water</td>
<td>iii) Fractional distillation</td>
</tr>
<tr>
<td>d) Acetone</td>
<td>iv) Chromatography and water</td>
</tr>
<tr>
<td>1. A(i), B(ii), C(iii), D(iv)</td>
<td>2. A(ii), B(iii), C(i), D(iv)</td>
</tr>
<tr>
<td>3. A(iv), B(i), C(iii), D(ii)</td>
<td>4. A(iv), B(iii), C(ii), D(i)</td>
</tr>
</tbody>
</table>
99. A compound PQ₂ 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 atom X is 37. It exists as a diatomic molecule X₂. One molecule of X₂ 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 H₂O  
2. 0.2 moles of H₂O  
3. 6.022 × 10²³ molecules of H₂O  
4. 1.2044 × 10²⁵ molecules of H₂O

102. Which of the following contains maximum number of molecules
1. 1 g SO₂  
2. 1 g NO₂  
3. 1 g NH₃  
4. 1 g H₂

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. 2 g hydrogen and 18 g  
3. 2 g hydrogen and 16 g oxygen  
4. 12 g hydrogen and 6 g oxygen

104. A sample of MgCO₃ contains 3.01 × 10²³ Mg²⁺ and 3.01 × 10²³ CO₃²⁻ ions. The mass of the sample is
1. 45 mg  
2. 84 g  
3. 42 g  
4. 42 mol

1. \( \frac{1}{9.108 \times 6.023} \times 10^5 \)  
2. 6.023 × 10²³  
3. \( \frac{1}{9.108} \times 10^{31} \)  
4. \( \frac{6.023 \times 10^{24}}{9.108} \)

106. Solubility of KNO₃
1. Increase with temperature  
2. Decreases with temperature  
3. Remains constant with temperature  
4. It is not related to temperature fluctuations

107. A mixture of sulphur and carbon disulphide is
1. Heterogeneous and shows Tyndall effect  
2. Heterogeneous and does not show Tyndall effect  
3. Homogeneous and shows Tyndall effect  
4. Homogeneous and does not show Tyndall effect

108. Dry ice is an example of which of the following processes
1. Evaporation  
2. Crystallization  
3. Sublimation  
4. Purification

109. Ninhydrin having molecule formula C₉H₆O₄ is commonly used by forensic scientists to detect and analyse fingerprints. The number of molecules in 7.4 g of ninhydrin is
1. 1.5 × 10²²  
2. 2.5 × 10²³  
3. 2.5 × 10²²  
4. 4.2 × 10²³
110. Percentage abundance of different isotopes of lead is given below
Pb–206 23.6%
Pb–207 22.6%
Pb–208 53.8%
The average atomic mass of lead is
1. 208 2. 207.567
3. 207.302 4. 209

111. Vitamin B₁₂ contain
1. Fe(II) 2. Co(III)
3. Zn(I) 4. Co(II)

112. Tincture of iodine is:
1. Aqueous solution of I₂ 2. Solution of I₂ in aqueous KI
3. Alcoholic solution of I₂ 4. Aqueous solution of KI

113. Fog is colloidal solution of
1. Gas in liquid 2. Liquid in gas
3. Gas is solid 4. Solid in gas

114. The oxidation state of P in H₃PO₃ is –
1. +6 2. +7
3. −3 4. +3

115. The weight of a molecule of the compound C₆₀H₁₂ is
1. 1.4 × 10⁻²¹ g 2. 1.09 × 10⁻²¹ g
3. 5.025 × 10²³ g 4. 16.023 × 10²³ g

116. Calculate the number of ions present in 5.85 g of NaCl
1. 0.204 × 10²³ ions 2. 1.204 × 10²³ ions
3. 6.023 × 10²³ ions 4. 12.04 × 10²³ 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 (CS₂) the mass of sulphur in combination with 3.0 g carbon is
1. 4.0 g 2. 6.0 g
3. 64.0 g 4. 16.0 g

120. ______________ is a semiconductor
1. Boron 2. Copper
3. Lead 4. Gold

121. Which of the following weighs maximum?
1. 0.5 mole of H₂O 2. 0.5 mole of C₂H₆
3. 1 mole of NH₃ 4. 0.1 mole of CO₂

122. ______________ is used for leukemia
1. Fe – 59 2. P – 32

123. In Fe₂O₃, Fe is __________
1. Monovalent 2. Bivalent
3. Neutral 4. Trivalent
124. _________ gas evolved when Mn react with very dilute HNO\textsubscript{3}
   1. NO\textsubscript{2}  
   2. H\textsubscript{2}  
   3. N\textsubscript{2}O  
   4. NO

125. _________ Alloy is used for welding electrical wires
   1. Solder  
   2. Geamen silver  
   3. Stainless steel  
   4. Gun metal

126. Aqua regia is the mixture of cone. HCl and Cone. HNO\textsubscript{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. Mg > Al > Zn > Fe  
   2. Mg > Zn > Fe > Al  
   3. Al > Mg > Zn > Fe  
   4. Mg > Zn > Al > Fe

129. Electrolysis of water gives:
   1. H\textsuperscript{+} and OH\textsuperscript{–} ions in the solution  
   2. H\textsubscript{2} gas at anode and O\textsubscript{2} gas at cathode  
   3. O\textsubscript{2} gas at anode and H\textsubscript{2} gas at cathode  
   4. H\textsubscript{2}O(I) converted into H\textsubscript{2}O(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 Leeuwenhoek

134. Which of the following plant group is not included in Cryptogamae
   1. Thallophyta  
   2. Gymnosperm  
   3. Bryophyta  
   4. Pteriodophyta

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
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| 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. Chiorechyma  
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. Lysosome  
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?

155. Kala-azar is caused by

156. World AIDS Day is celebrated on:
   1. 2 December  2. 2 November  3. 4 January  4. 1 December

157. Water Vascular System of locomotion is found in

158. Pseudocoelom is found in

159. The eukaryotic cell without plastid is found in

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?

162. The life supporting zone of the earth is

163. Indigenous breed of poultry in India is

164. Rain water which have dissolved oxides of sulphur and nitrogen, forms:

165. Gonorrhoea, a sexually transmitted disease is caused by

166. In which of the following animals, cutaneous respiration occurs:

167. 2, 4-D chemical is used as

168. Chemical responsible for ozone depletion is
   1. DDT  2. CFCs  3. BHC  4. CO₂
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 \( x = \sqrt{3} + 1 + \frac{\sqrt{3} - 1}{\sqrt{3} + 1} + \frac{\sqrt{3} - 2}{\sqrt{3} + 2} \), then the value of \( x^2 + \left( \frac{39}{x} \right)^2 \) is
1. 104  2. 114
3. 124  4. 144

172. If \( \frac{a + b}{a} = 1 \), \( (a, b \neq 0) \) 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°, then the angle between the angle bisectors of the other two angle is
1. 145°  2. 155°
3. 135°  4. 95°

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 \((3x - 1)^7 = ax^7 + ax^6 + ax^5 + \ldots + ax + a_0\), then the value of \((a_7 + a_6 + a_5 + \ldots + a_1 + a_0)\) 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°  2. 75°
3. 45°  4. 80°
181. One angle of a pentagon is 140°. If the remaining angles are in the ratio 1 : 2 : 3 : 4, then the greatest angle is
1. 160°
2. 170°
3. 140°
4. 150°

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 \( \sqrt{42 + \sqrt{42 + \sqrt{42 + \ldots \infty}} } \) is
1. 9
2. 8
3. 6
4. 7

184. In the given triangle RST, the value of \( x \) is
1. 40°
2. 90°
3. 80°
4. 100°

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 \( 0.272 + 0.136 \) 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 \( \left( \frac{a - 1}{a} \right) \) is
1. 0
2. \( 2 + \sqrt{3} \)
3. 4
4. \( 2\sqrt{3} \)

188. In the given figure, AB || 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 at least 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. \( 2 \)
3. \( 4 \)
4. \( 3 \)

195. If \( 2 \ell - m + n = 0 \), then the value of \( 4 \ell^2 - m^2 + n^2 + 4 \ell/n \) is

1. \( 1 \)
2. \( -1 \)
3. \( 0 \)
4. \( 2 \)

196. If \( m^2 + \frac{1}{25m^2} = \frac{8}{5} \), then the value of \( m^2 + \frac{1}{125m^3} \) 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. \( \frac{1}{3} \)
2. \( \frac{1}{9} \)
3. \( \frac{9}{10} \)
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
2. 24
3. 60
4. 100