Directions (Questions 1-5): Choose the word which best expresses the meaning of the underlined word in the sentence.

1. She is a very <u>sensible</u> person.
   (1) rational   (2) cunning   (3) educated   (4) sensitive

2. I am on the horns of <u>dilemma</u> these days.
   (1) confusion   (2) clear
   (3) difficult situation   (4) favourable situation

3. The musicians found out that they do not have <u>ample</u> time to go there.
   (1) some   (2) enough   (3) much   (4) abundant

4. The minister's speech was not <u>comprehensible</u> to the public.
   (1) complement   (2) confident
   (3) able to be understood   (4) comprehensive

5. Man is <u>mortal</u>.
   (1) ever growing   (2) constantly active   (3) imperishable   (4) subject to death

Directions (Questions 6-10): Choose the word which is closest to the opposite in meaning of the underlined word in the sentence.

6. The Ganga is a <u>pious</u> river.
   (1) impure   (2) terrible   (3) common   (4) pure

7. <u>Bravery</u> is a good quality.
   (1) Audacity   (2) Fearful   (3) Heroism   (4) Cowardice

8. A <u>unanimous</u> decision was taken by the organization.
   (1) great   (2) one-sided   (3) fair   (4) unfair

9. She was very <u>cheerful</u> on her wedding day.
   (1) overjoyed   (2) emotional   (3) happy   (4) cheerless

10. Educated parents make a <u>virtuous</u> circle.
    (1) vicious   (2) long   (3) alternative   (4) good

Directions (Questions 11-15): Choose the option which best expresses the meaning of the underlined idiom/phrase in the sentence.

11. Peter was <u>put in cold storage</u> in the party.
    (1) sadness   (2) ignored   (3) grief   (4) sympathy

12. Ravish showed <u>crocodile tears</u> at the death of his employee.
    (1) happiness   (2) fake mourning   (3) weeping   (4) mourning

13. The President <u>did away</u> with the unpopular act.
    (1) retain   (2) abolish   (3) distribute   (4) consider

14. <u>A good weather friend</u> is not a true friend.
    (1) attentive friend   (2) faithful friend   (3) selfish friend   (4) caring friend

15. He cannot praise you unnecessarily because he <u>calls a spade a spade</u>.
    (1) states clearly   (2) pretends   (3) makes things vague   (4) absconds

Directions (Questions 16-20): In each of these questions, choose the word which can be substituted for the given sentence/words.

16. A book or work of art whose creator is not known.
    (1) Unknown   (2) Unanimous   (3) Unidentified   (4) Anonymous

17. A disease which spreads by physical contact.
    (1) Non infectious   (2) Contagious   (3) Untouchable   (4) Fatal

18. One who eats too much.
    (1) Fat   (2) Obese   (3) Glutton   (4) Gorge

19. One who knows many languages.
    (1) Bi-lingual   (2) Decoder   (3) Linguist   (4) Cryptologist

20. Happening at the same time.
    (1) Simultaneous   (2) Co-happening   (3) Coexistent   (4) Identical

Directions (Questions 21-24): Fill in the blank.

21. Mounting unemployment is the most serious and _____ problem being faced by India today.
    (1) dubious   (2) profound   (3) unpopular   (4) intractable

22. His logic _____ everyone, including the experts.
    (1) surprised   (2) teased   (3) mocked   (4) confounded

23. The unruly behaviour of the students _____ their teacher.
    (1) tempered   (2) clashed   (3) impeached   (4) incensed

24. The children _____ crackers to celebrate the victory of their team.
    (1) burst   (2) fired   (3) shot   (4) broke

Directions (Questions 25-30): Study the passages below and answer the questions that follow each passage.

Passage-I

Complementary and alternative medicine, which includes a range of practices outside of conventional medicine such as herbs, homeopathy, massage therapy, yoga, and acupuncture, hold increasing appeal for Americans. In fact, according to one estimate, 42% of Americans have used alternative therapies. In all age groups, the use of unconventional healthcare practices has steadily increased in the last 30 years, and the trend is likely to continue, although people born before 1945 are the least likely to turn to these therapies. Why have so many patients turned to alternative therapies? Many are frustrated by the time constraints of managed care and alienated by conventional medicine's focus on technology. Others feel that a holistic approach to healthcare better reflects their beliefs and values. Others seek therapies that relieve symptoms associated with chronic disease; symptoms that mainstream medicine cannot treat. Some alternative therapies have even crossed the line into mainstream medicine, as scientific investigation has confirmed their safety and efficacy. For example, physicians may currently prescribe acupuncture for pain management or to control the nausea associated with chemotherapy. Additionally, many U.S. medical schools teach courses in alternative therapies, and many health insurance companies offer some alternative medicine benefits.

25. What is the main idea of this passage?

    (1) Alternative medicine is now a big business in the United States with more Americans seeking it out than ever before.

    (2) Today, it is not unusual for mainstream doctors to incorporate alternative therapies into their practice.

    (3) Over the last few decades, alternative medicine has become more popular, accepted, and practised in the United States.

    (4) People are tired of conventional medicine's focus on technology.

26. According to the passage, which practice would not be defined as alternative medicine?

    (1) Pain management   (2) Acupuncture

    (3) Taking herbal garlic supplements   (4) Massage therapy

27. Based on the passage, what kind of person would be least likely to seek out alternative medical treatment?

    (1) A senior citizen suffering from chemotherapy induced nausea.

    (2) A young woman suffering from chronic fatigue syndrome.

    (3) A 45-year-old man who believes that his body and mind must be treated together.

    (4) A 25-year-old track star with chronic back pain.

Passage-II

Sprouts not only contain a full spectrum of minerals, but during the process of soaking, germination and sprouting the mineral salts present undergo significant changes. The changed compounds are of the water soluble variety, easily assimilated by the body. The quantum of nutrient present also increases in multiples. For example, sprouted moong has an 8.3% increase in water content over the seed. Its energy content decreases by 15%, its carbohydrates content decreases by 9% and its protein availability increases by 30%. All this makes it an ideal food for those who desire to lose weight. At the same time, it provides a more than ample supply of vitamins, minerals and amino acids. Another benefit of becoming a sproutarian is the fact that sprouts have a lot of fibre and water and hence they drive away constipation. The reduction in carbohydrate content indicates that many carbohydrate molecules are broken down during sprouting: and these react with atmospheric nitrogen to form amino acids. The resultant protein has a simple molecular structure, and is the most digestible protein available in all foods. Also, during sprouting much of the starch gets broken down by enzymatic action into simple, pre-digested sugars such as glucose and sucrose. The proteins are converted into amino acids and amides, and this reduction in the amount of complex proteins ingested prevents ageing and the degenerative diseases. A handful of common moong seeds can blossom and provide the most complete of meals. After the seed has been sprouted, the calcium content increases by 34%, potassium content increases by 80%, the iron content increases by 40%, the phosphorous content increases by as much as 690%. Sprouted sesame seeds too, are excellent for providing the body with easily assimilable minerals. They contain 10 times more calcium than cow's milk.

28. Why is sprout most easily digestible in terms of its protein content?
    (1) Protein has a simple molecular structure.
    (2) Calcium content is low, hence digestion is easy.
    (3) There is an increase in complex proteins.
    (4) Fats and oils are eliminated.

29. Why is sprout an ideal choice of food for those who want to lose weight?
    (1) It contains digestive acids.
    (2) It is rich in calories.
    (3) It is rich in protein content.
    (4) It contains vitamins, minerals and amino acids.

30. In which process do the minerals in sprouts undergo significant changes?
    (1) Spectral changes
    (2) Soaking, germination and sprouting
    (3) Assimilation
    (4) Radiation and Germination

31. In a projectile motion, the velocity is
    (1) always perpendicular to the acceleration.
    (2) never perpendicular to the acceleration.
    (3) perpendicular to the acceleration for one instant only.
    (4) perpendicular to the acceleration for two instants.

32. A cannon ball is fired with a velocity v in a direction making an angle θ with the horizontal. At the highest point of its path it breaks into two parts of equal masses. One of the parts retraces the initial path of the ball. The speed of the second part immediately after explosion in m/s will be

    (1) $\frac{3}{2}v\cos\theta$ (2) $\sqrt{\frac{3}{2}}v\cos\theta$ (3) $2v\cos\theta$ (4) $3v\cos\theta$

33. Mr. Naveen kicked off a football with an initial speed 19.6 m/s at a projection angle 45°. A receiver on the goal line 67.4 m away in the direction of the kick starts running to meet the ball at that instant. What must be his speed so that he could catch the ball before hitting the ground?
    (1) 2.82 m/s (2) $2/\sqrt{2}$ m/s (3) 39.2 m/s (4) 10 m/s

34. A car starts from rest to cover a distance s. The coefficient of friction between the road and the tyres is μ. The minimum time in which the car can cover the distance is proportional to _____.

    (1) μ (2) $\sqrt{\mu}$ (3) $\sqrt{\frac{1}{\mu}}$ (4) $\frac{1}{\sqrt{\mu}}$

35. A particle moves along the x-axis from $x = x_1$ to $x = x_2$ under the influence of a force given by $F = 2x$. Then work done in the process is _____.
    (1) zero   (2) $x_2^2 - x_1^2$ (3) $2x_2(x_2 - x_1)$ (4) $2x_1(x_1 - x_2)$

36. The speed v reached by a car of mass m, driven with constant power P, is given by _____.

    (1) $v = \frac{3xp}{m}$ (2) $v = \left(\frac{3xP}{m}\right)^{1/2}$ (3) $v = \left(\frac{3xP}{m}\right)^{1/3}$ (4) $v = \left(\frac{3xP}{m}\right)^2$

37. A convex and a concave lens separated by distance d are then put in contact. The focal length of the combination
    (1) decreases   (2) increases   (3) becomes 0   (4) remains the same

38. Two discs of same thickness but of different radii are made of two different materials such that their masses are same. The densities of the materials are in the ratio 1 : 3. The moments of inertia of these discs about the respective axes passing through their centres and perpendicular to their planes will be in the ratio _____.
   (1) 1 : 3   (2) 3 : 1   (3) 1 : 9   (4) 9 : 1

39. A body weighs *W Newton* at the surface of the earth. Its weight at a height equal to half the radius of the earth will be _____.

    (1) $\dfrac{W}{2}$
    (2) $\dfrac{2W}{3}$
    (3) $\dfrac{4W}{9}$
    (4) $\dfrac{8W}{27}$

40. A geostationary satellite orbits around the earth in a circular orbit of radius 36000 km. Then, the time period of a satellite orbiting a few hundred kilometres above the earth's surface (R_{Earth} = 6400 km) will approximately be
    (1) 1/2 h
    (2) 1 h
    (3) 2 h
    (4) 4 h

41. A heavy uniform rod is hanging vertically from a fixed support. It is stretched by its own weight. The diameter of the rod is
    (1) smallest at the top and gradually increases down the rod.
    (2) largest at the top and gradually decreases down the rod.
    (3) uniform everywhere.
    (4) maximum in the middle.

42. On bisecting a soap bubble along a diameter, the force due to surface tension on any of its half part will be _____.

    (1) $4\pi RT$
    (2) $\dfrac{4\pi R}{T}$
    (3) $\dfrac{T}{4\pi R}$
    (4) $\dfrac{2T}{R}$

43. In a seconds pendulum, mass of the bob is 30 gm. If it is replaced by 90 gm mass, then its time period will be
    (1) 1 sec.
    (2) 2 sec.
    (3) 4 sec.
    (4) 3 sec.

44. The potential energy of a particle executing S.H.M. is 2.5 J, when its displacement is half of amplitude. The total energy of the particle is _____.
    (1) 18 J
    (2) 10 J
    (3) 12 J
    (4) 2.5 J

45. A simple pendulum has a metal bob, which is negatively charged. If it is allowed to oscillate above a positively charged metallic plate, then its time period will
    (1) increase.
    (2) decrease.
    (3) become zero.
    (4) remain the same.

46. A cylindrical bar magnet is kept along the axis of a circular coil. If the magnet is rotated about its axis, then
    (1) a current will be induced in the coil.
    (2) no current will be induced in the coil.
    (3) only an e.m.f. will be induced in the coil.
    (4) both e.m.f. and current will be induced in the coil.

47. A body of mass 4 kg is accelerated upon by a constant force, travels a distance of 5 m in the first second and a distance of 2 m in the third second. The force acting on the body is

    (1) 2 N   (2) 4 N   (3) 6 N   (4) 8 N

48. In a double slit experiment, instead of taking slits of equal widths, one slit is made twice as wide as the other. Then in the interference pattern the
    (1) intensities of both the maxima and the minima increase.
    (2) intensity of maxima increases and the minima has zero intensity.
    (3) intensity of maxima decreases and that of the minima increases.
    (4) intensity of maxima decreases and the minima has zero intensity.

49. Which of the following statements is incorrect?
    (1) Half-life of a neutron is 13 minutes.
    (2) The stability of a nucleus is determined by the number of neutrons present in it.
    (3) Both fast and slow neutrons are capable of penetrating a nucleus.
    (4) A free neutron decays into a proton, an electron and positron.

50. The depletion layer in silicon diode is 1 µm wide and the knee potential is 0.6 V, then the electric field in the depletion layer will be _____.
    (1) zero   (2) 0.6 Vm^{-1} (3) 6×10^4 V/m   (4) 6×10^5 V/m

51. Which of the following is a scalar quantity?
    (1) Impulse   (2) Current   (3) Torque   (4) Momentum

52. Human eye is most sensitive to the colour having wavelength of nearly
    (1) 680 nm.   (2) 720 nm.   (3) 480 nm.   (4) 550 nm.

53. A double converse lens of focal length 15 cm produces a distinct real image of an object on a screen kept at 150 cm away from the object. On moving the lens alone, how many other distinct images of the same object can be produced on the same screen?
    (1) Zero   (2) One   (3) Ten   (4) Two

54. A person, standing near the edge of the top of a tall building throws two balls A and B. The ball B is thrown vertically upward while the ball A is thrown vertically downward, with the same speed V. Then, the ball A hits the ground with a speed V while the ball B hits the ground with a speed V'. Which of the following relationships is likely to hold true?
    (1) V = V'
    (2) V > V'
    (3) V < V'
    (4) The relationship between the speeds V and V' will depend on the height of the tall building above the ground only.

55. A vehicle with 40 cm diameter wheels is moving with a speed of 18 m/s. Then, wheels of the vehicle are turning at a speed of
    (1) 90 revolutions/second.　　　　　　　　　(2) 45 m/s.
    (3) 18 revolutions/second.　　　　　　　　　(4) $45/\pi$ revolutions/second.

56. The kinetic energy E of an object of mass m, having linear momentum p, will be _____.
    (1) p^2m^2　　　　　(2) p^2/m^2　　　　　(3) $p^2/2m$　　　　　(4) p^2/m

57. The capacitance across the terminal A and B of the electrical circuit, given below, is _____.

$C_1=10\mu F$

$C_2=10\mu F$　　$C_3=10\mu F$

A

B

$C_4=10\mu F$
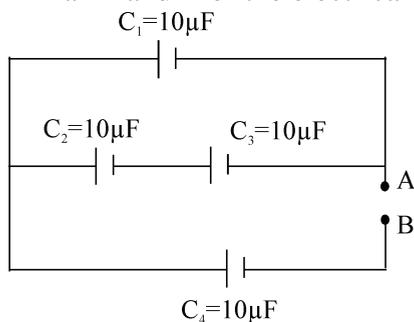
    (1) $6\mu F$　　　　　(2) $10\mu F$　　　　　(3) $15\mu F$　　　　　(4) $5\mu F$

58. The angular momentum of a flywheel, having rotational inertia of 0.16 kg m^2, decreases from 3.2 kg m^2/s to 0.8 kg m^2/s in 1.2s. The average torque acting on the flywheel during this period is _____.
    (1) 2.0 Nm　　(2) 2.6 kg m^2/s^2　　(3) 3.9 kg m^2/s^2　　(4) 1.6 Nm

59. If a gymnast, sitting on a rotating stool, with his arms out-stretched, suddenly folds his arms, his
    (1) moment of inertia decreases.　　　　　(2) angular velocity remains constant.
    (3) angular momentum decreases.　　　　　(4) angular momentum increases.

60. The intensity ratio of two waves A and B is 1:9. Then, the ratio of their amplitudes will be ____.
    (1) 9:1　　　　　(2) 1:9　　　　　(3) 1:3　　　　　(4) 3:1

61. The total energy of a particle, executing simple harmonic motion (SHM) is proportional to
    (1) its period.　　　　　　　　　　　(2) its phase angle.
    (3) the square of its amplitude.　　　　(4) None of these

62. A capacitor of capacitance 900 pF is charged by a battery of 100 V. Then, the electrostatic energy stored by the capacitor will be _____.
    (1) 4.5 µJ　　　　(2) 4.5 nJ　　　　(3) 4.5 J　　　　(4) 9 µJ

63. The initial velocity of a body travelling along a straight line is 20 ms^{-1}. If the retardation of the body is 4 ms^{-1}, the distance moved by the particle in the 5th second is _____.

    (1) 2 m   (2) 19 m   (3) 75 m   (4) 100 m

64. If the change in the value of 'g' at a height 'h' above the surface of the earth is the same as at a depth 'x' below its surface, then

    (1) x = h^2 (2) x = 0.5 h   (3) x = 2 h   (4) x = h

65. Terminal velocity of a body of a radius ' R' is directly proportional to _____.

    (1) R^2 (2) R^{-2} (3) R   (4) R^{-1}

66. The temperature at which Celsius and Fahrenheit scale have the same reading is _____.

    (1) -10° C   (2) -20° C   (3) -30° C   (4) -40° C

67. The masses of two radioactive substances are same and their half lives are 1 year and 2 years respectively. The ratio of their activities after 6 years will be

    (1) 1 : 4   (2) 1 : 2   (3) 1 : 3   (4) 1 : 6

68. Which of the following statements is incorrect?

    (1) Work done in the adiabatic process is greater than the work done in isothermal process.

    (2) Work done in the adiabatic process is directly proportional to the gas.

    (3) Work done in the adiabatic process is directly proportional to the temperature difference.

    (4) $\dfrac{nR(T_2 - T_1)}{\gamma - 1}$

69. Work that must be done by a force on 100 kg body in order to accelerate it from 0 to 20 m/s in 10 seconds is _____.

    (1) 2×10^4 J   (2) 4×10^3 J   (3) 4×10^4 J   (4) 0.2×10^3 J

70. An ideal heat engine operates in Carnot cycle between 227°C and 327°C. It absorbs 6×10^4 calories at the higher temperature. Calculate the amount of heat converted into work.

    (1) 1×10^4 calories   (2) 1.6×10^4 calories   (3) 2×10^4 calories   (4) 3×10^4 calories

71. How many times more intense is a 90 dB sound compared to 40 dB sound?

    (1) 10^5 (2) 100   (3) 1000   (4) 10^4

72. A small particle carrying a negative charge of 2×10^{-19} C is suspended in equilibrium between the horizontal plates 10 cm apart, having a potential difference of 2000 V across them. The mass of the particle is (assuming $g \sim 10$ ms^{-2})

    (1) 4×10^{-16} Kg   (2) 5×10^{-16} Kg   (3) 3×10^{-16} Kg   (4) 2×10^{-16} Kg

73. A wire is stretched to make it 0.1% longer. The percentage change in its resistance is _____.
    (1) 0.2%   (2) 0.1%   (3) 0.4%   (4) 0.8%

74. The ratio of the concentration of electrons to that of holes in a semiconductor is 9/5 and the ratio of currents is 9/4, then the ratio of their drift velocities is _____.
    (1) 5/4   (2) 3/4   (3) 2/3   (4) 1/3

75. A ferromagnetic material is heated above its curie temperature. Which one is correct statement?
    (1) Ferromagnetic domains are perfectly arranged
    (2) Ferromagnetic domains become random
    (3) Ferromagnetic domains are not influenced
    (4) Ferromagnetic materials changes into diamagnetic materials

76. If a current is given by $I = I_o \sin\left(wt - \dfrac{\pi}{2}\right)$ flows in an A.C. circuit across which an A.C. potential $E = E_o \sin(wt)$ has been applied, then power consumption in the circuit will be _____.

    (1) $P = E_o \dfrac{I_o}{2\sqrt{2}}$ (2) $P = E_o \dfrac{I_o}{\sqrt{2}}$ (3) $P = E_o \dfrac{I_o}{2}$ (4) 0

77. Which of the following electromagnetic waves has the longest wavelength?
    (1) Heat Waves   (2) Visible Light
    (3) Radio frequency waves   (4) Microwaves

78. The current relationship between two current gains (á, â) in a transistor is _____.
    (1) $\dfrac{\beta}{1+\beta}$ (2) $\beta = \dfrac{\alpha}{1+\alpha}$ (3) $\alpha = \dfrac{\beta}{1-\beta}$ (4) $\alpha = \dfrac{\beta}{2+\beta}$

79. Operating point of a transistor is _____.
    (1) zero signal value of I_c and V_{CE} (2) zero signal value of I_c
    (3) zero signal value of V_{CC} (4) zero signal value of I_b and V_{CC}

80. The GATE represented by block diagram is
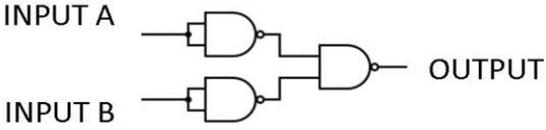
    (1) AND gate.   (2) OR gate.   (3) NOR gate.   (4) NAND gate.

81. If A and B are square matrices of the same order r, then (A+B)(A-B) = _____.

(1) $A^2-BA-AB-B^2$ (2) $A^2-B^2+BA-AB$ (3) A^2-B^2 (4) A^2-BA+B^2+AB

82. There are two values of 'a' which makes $\begin{vmatrix} 1 & -2 & 5 \\ 2 & a & -1 \\ 0 & 4 & 2a \end{vmatrix} = 86$, then the sum of these numbers is

_____.

(1) 7   (2) 9   (3) –4   (4) 4

83. For the function $f(x)=x^3-3x$, the value of c in the interval $\left[-\sqrt{3},0\right]$ by Rolle's theorem is

_____.

(1) 1   (2) –1   (3) $\dfrac{-3}{2}$ (4) $\dfrac{-1}{3}$

84. If $x=t^2, y=t^3$, then $\dfrac{d^2y}{dx^2} =$ _____.

(1) $\dfrac{3}{4t}$ (2) $\dfrac{3}{2t}$ (3) $\dfrac{3}{2}$ (4) $\dfrac{3t}{4}$

85. $\displaystyle\int_{a+c}^{b+c} f(x)dx =$ _____.

(1) $\displaystyle\int_{a-c}^{b-c} f(x)dx$ (2) $\displaystyle\int_{a}^{b} f(x-c)dx$ (3) $\displaystyle\int_{a}^{b} f(x+c)dx$ (4) $\displaystyle\int_{a}^{b} f(x)dx$

86. $\displaystyle\int e^x\left(\dfrac{1-x}{1+x^2}\right)^2 dx =$ _____.

(1) $\dfrac{-e^x}{1+x^2}+c$ (2) $\dfrac{e^x}{1+x^2}+c$ (3) $\dfrac{e^x}{\left(1+x^2\right)^2}$ (4) $\dfrac{-e^x}{\left(1+x^2\right)^2}+c$

87. The angle between the vectors $\hat{i}-\hat{j}$ and $\hat{j}-\hat{k}$ is _____.

(1) $-\dfrac{\pi}{3}$ (2) $\dfrac{\pi}{6}$ (3) $\dfrac{\pi}{3}$ (4) $\dfrac{2\pi}{3}$

88. Distance of point (α,β,r) from y-axis is _____.

(1) $|\beta|$ (2) $\sqrt{\alpha^2+r^2}$ (3) α (4) $|\beta|+|r|$

89. If A and B' are independent events then $P(A'\cup B)=1$ _____.

(1) $P(A)P(B')$ (2) $P(A')P(B')$ (3) $P(A'\cap B')$ (4) $P(A')P(B)$

90. A man is known to speak truth 3 out of 4 times. He throws a dice and reports that it is a six. The probability that it is actually a six is _____.

(1) $\dfrac{3}{4}$ (2) $\dfrac{1}{6}$ (3) $\dfrac{3}{8}$ (4) $\dfrac{1}{4}$

91. The domain and range of the real function f defined by $f(x) = \dfrac{5-x}{x-5}$ is given by _____.

(1) Domain = R, Range = {-5,5} (2) Domain = R-{1}, Range = R
(3) Domain = R–{5}, Range = {–1} (4) Domain = R–{5}, Range = {1}

92. If $\sin\theta + \cos ec\theta = -2$, then $\sin^2\theta + \cos ec^2\theta = $_____.

(1) 2 (2) 4 (3) –4 (4) –1

93. The sum of the series $i + i^2 + i^3 + \ldots\ldots +$ up to 100 terms is _____.

(1) i (2) –i (3) 0 (4) 1

94. For a real number x if $|x| < 2$, then _____.

(1) $x > 2$ (2) $x < -2$ (3) $-2 < x < 2$ (4) $-2 < x < 2$

95. The number of ways of selecting 11 players from 22 players always including 2 of them and excluding 4 of them is _____.

(1) $^{20}C_{11}$ (2) $^{16}C_{11}$ (3) $^{20}C_9$ (4) $^{16}C_9$

96. The locus of the centre of a square made outside the circle $x^2+y^2=a^2$ on a chord of length equal to radius is _____.

(1) $x^2 + y^2 = a^2(\sqrt{3}+1)/2$ (2) $x^2 + y^2 = a^2(\sqrt{3}+1)/4$
(3) $x^2 + y^2 = a^2(\sqrt{3}/2+1)$ (4) $x^2 + y^2 = a^2(\sqrt{3}/2+2)$

97. The triangle having the largest area in a circle of radius r has _____ as one of its side.

(1) $2r$ (2) $\sqrt{3}r$ (3) $2r/\sqrt{3}$ (4) None of these

98. For $x = 2$, which of the following statement is false?
(1) x is prime and x is even (2) x is odd or x is even
(3) x is not prime and x is even (4) x is odd or x is prime

99. The diagonal of square made touching the hyperbola $x.y = 2$ tangentially is _____.

(1) $4\sqrt{2}$ (2) $4\sqrt{3}$ (3) $3\sqrt{3}$ (4) 4

100. The image of the point (1, 2, 3) in a plane is (3, 2, 1). The plane passes through the point _____.

(1) (4,5,6) (2) (5,4,6) (3) (4,5,4) (4) (4,5,5)

101. A plane passes through (1, 0, 1), (1, 1, 0) and gives a circle of area π when intersect with sphere $x^2 + y^2 + z^2 = 1$. The normal to the plane passing through (2, 3, 5) also passes through _____.

    (1) (3,2,6)   (2) (6,3,2)   (3) (3,2,4)   (4) (3,2,5)

102. Normal to a plane at $(1/2, 0, \sqrt{3}/2)$ has distance 0.5 unit from centre of unit sphere at origin. The area of circle cut by the plane to sphere is _____.

    (1) $\pi\sqrt{3}/4$ (2) $\pi/3$ (3) $\pi/2$ (4) $\pi/4$

103. A largest sphere is made inside the sphere $x^2 + y^2 + z^2 = 1$ and outside the sphere $(x - 1)^2 + (y - 1)^2 + z^2 = 1$. The volume of the sphere is _____.

    (1) $\pi\sqrt{2}/3$ (2) $\pi\sqrt{3}/2$ (3) $\pi\sqrt{4}/3$ (4) $\pi\sqrt{3}/4$

104. The plane passing through (1, 2, 3), (2, 1, 3) and origin is rotated at right angle. The plane now passes through the point _____.

    (1) (1,1,1)   (2) (2,3,2)   (3) (1,1,-1)   (4) (3,2,3)

105. A vector has components and 3 in rectangular coordinate. If the plane is rotated with angle q counter clockwise, then its components $2a+1$ and 1. The value of a is _____.

    (1) –7/3, 1   (2) 7/3, 1   (3) –1, -7/3   (4) –1, 7/3

106. The vector $w = (2 - a)\,i + (2 + a)\,j + a^2\,k$ is parallel to plane containing the vector $u = 4\,i + j + k$ and $v = i + 2\,j + 3\,k$. The value of a is _____.

    (1) $\frac{2}{7}\left(3+3\sqrt{11}\right)$ (2) $\frac{2}{7}\left(2+3\sqrt{11}\right)$ (3) $\frac{2}{7}\left(3+2\sqrt{11}\right)$ (4) $\frac{2}{7}\left(2+2\sqrt{11}\right)$

107. Vectors $u = a\,i + 5\,j + k$, $v = 2\,i + j + 5\,k$ and $w = i + 4\,j + (a - 1)\,k$ are coplanar. Then a is _____.

    (1) $\frac{2}{5}\left(1+3\sqrt{39}\right)$ (2) $\frac{2}{5}\left(3-3\sqrt{39}\right)$ (3) $\frac{3}{5}\left(1+3\sqrt{39}\right)$ (4) $\frac{2}{5}\left(1-5\sqrt{39}\right)$

108. In a biased dice, the probability of getting even number is twice of odd number. If two such dices are rolled, what is probability of getting a sum 9?

    (1) 10/81   (2) 18/81   (3) 1/12   (4) 8/81

109. Ram picks a random card out of pack of 52 cards and if it is not a queen, he replaces and again picks. How many cards, he should draw so that his probability of getting queen is at least 0.5?

    (1) 6   (2) 7   (3) 8   (4) 9

110. A cinema hall offers 10%, 20% and 30% of discount on tickets of type I, II, and III. If the ratio of tickets of type I, II and III are 5:3:2 and Shyam buys a ticket randomly, what is probability that he gets discount more than 10%?

    (1) 0.25   (2) 0.33   (3) 0.66   (4) 0.5

111. The probability of a same birth date of at least two students in a class of 20 students is _____.
    (1) 0.411   (2) 0.588   (3) 0.25   (4) 0.114

112. The number of solutions of $10^{\wedge}\text{Sec}^2(x) + 10^{\wedge}\text{Tan}^2(x) = 110$ for x in $[0, 2\pi]$ is _____.
    (1) 0   (2) 1   (3) 2   (4) ∞

113. The number of values of x in $[0, 2\pi]$ for which $\text{Cos}(x/2)$, $\text{Sin}(x)$ and $\text{Tan}(x/2)$ are in G.P. is
    (1) 0   (2) 2   (3) 4   (4) 6

114. If $20\alpha = \pi$, then value of $\text{Cot}(\alpha).\text{Cot}(2\alpha)\ldots\text{Cot}(9\alpha)$ is
    (1) -1 (2) ∞ (3) 1   (4) $-\infty$

115. If $\dfrac{11z_1}{17z_2}$ is purely imaginary, then $\left[\dfrac{3z_1 + 5z_2}{3z_1 - 5z_2}\right]$ is equal to

    (1) $\dfrac{11}{17}$ (2) $\dfrac{13}{19}$ (3) $\dfrac{33}{85}$ (4) None of these

116. Let $z_1 = 1 - i$ and $z_2 = 3 + \sqrt{2}i$, then the curve represented by $\left|\dfrac{z - z_1}{z - z_2}\right| = 7$ is a

    (1) straight line.   (2) circle.   (3) parabola.   (4) None of these

117. Let O be the origin and A and B be two points in the argand plane such that O, A and B are collinear and OA.OB = 1. If the point A is represented by $\bar{z}$, then the point B is given by _____.

    (1) $\dfrac{1}{\bar{z}}$ (2) z (3) $\dfrac{1}{z}$ (4) None of these

118. The centre of a square ABCD is at the origin and point A is represented by $\sqrt{7} + 3i$. Then centroid of $\triangle BCD$ is represented by _____.

    (1) $-\dfrac{\sqrt{7}}{3} - i$ (2) $1 + i\dfrac{\sqrt{7}}{3}$ (3) $\dfrac{\sqrt{7}}{3} + i$ (4) $-1 - \dfrac{\sqrt{7}}{3}$

119. The number of ways in which 11 different flowers can be strung to form a garland so that 5 particular flowers are never separated is _____.
    (1) 5!.6!   (2) 5!.7!   (3) 76400   (4) None of these

120. The number of ways of distributing 7 bananas among 5 children so that each child receives atleast one banana is _____.
    (1) 21   (2) 35   (3) 15   (4) 7

121. The total count of numbers of seven digits that can be made using the digits 1 to 9 without repetition such that all the digits on the left of the digit in the middle are less than it and all the digits on the right of the digit in the middle are greater than the digit in the middle is _____.
    (1) 576　　　　　　　　(2) 1296　　　　　　　　(3) 8!　　　　　　　　(4) None of these

122. The number of 7 digit numbers in which no two adjacent digits are identical is _____.
    (1) 9.8^6　　　　　　　(2) $9^2.8^5$　　　　　　(3) $9^3.8^4$　　　　　　(4) 9^7

123. If X is a singular matrix of order n, then $X. (adjX)$ is _____.
    (1) Identity matrix　　(2) Null matrix　　　　(3) Scalar matrix　　　　(4) None of these

124. If A and B are square matrices of order 3 such that $|A| = -3$ and $|B| = 5$, then $|2AB|$ is _____.
    (1) –60　　　　　　　　(2) 120　　　　　　　　(3) –120　　　　　　　(4) 60

125. Consider the system of equations $2x - y + 2z = 2$; $x - 2y + z = -4$; $x + y + z = 4$. The number of solutions of this system of equations is _____.
    (1) 0　　　　　　　　　(2) 1　　　　　　　　　(3) 2　　　　　　　　　(4) Infinitely many

126. Let $a \neq x, b \neq y$ and $c \neq z$ and $\begin{vmatrix} a & b & z \\ x & b & c \\ x+a & y+b & 2c \end{vmatrix} = 0$, then $\dfrac{x}{x-a} + \dfrac{y}{y-b} + \dfrac{z}{z-c} =$ _____.
    (1) 0　　　　　　　　　(2) 1　　　　　　　　　(3) 2　　　　　　　　　(4) 3

127. The range of function $f(x) = \log^3(9 - x^2)$ is _____.
    (1) $(-\infty, 3]$　　　　(2) $[-3, 3]$　　　　　(3) $[0, 3]$　　　　　　(4) $(-3, 3)$

128. The function $f(x) = 2\sin 3x + 3\cos\sqrt{5}x$ is _____.
    (1) periodic function with period 2π
    (2) periodic function with period $\dfrac{2\pi}{3}$
    (3) periodic function with period $\dfrac{2\pi}{\sqrt{5}}$
    (4) not a periodic function

129. If $f(x) = \sin x - \cos x$ and $g(x) = 1 - x^2$, then $g(f(x))$ is invertible in the domain _____.
    (1) $\left[0, \dfrac{\pi}{2}\right]$　　　(2) $\left[-\dfrac{\pi}{4}, \dfrac{\pi}{4}\right]$　　　(3) $\left[-\dfrac{\pi}{4}, \dfrac{\pi}{2}\right]$　　　(4) $[0, \pi]$

130. Let $f : [-3, 0] \to R$ be given by $f(x) = e^x + \cos x$, then its extension to $[-3, 3]$ is given by _____.
    (1) $-e^{|x|} - \cos|x|$　　(2) $e^{-|x|} - \cos|x|$　　(3) $e^{-|x|} + \cos|x|$　　(4) $-e^{|x|} + \cos|x|$

131. The Principal buffer present in human blood is _____.
    (1) $NaH_2PO_4 + Na_2HPO_4$ (2) $H_3PO_4 + NaH_2PO_4$
    (3) $H_2CO_3 + HCO_3^-$ (4) $CH_3COOH + CH_3COONa$

132. Number of moles MnO_4^- required to oxidize one mole of ferrous oxalate in acidic medium will be
    (1) 2.5 mol.   (2) 0.2 mol.   (3) 0.6 mol.   (4) 0.4 mol.

133. At a temperature of about 20K (very low), which allotropes form of molecular hydrogen is more stable?
    (1) Ortho hydrogen   (2) Para hydrogen
    (3) Both Ortho and Para hydrogen   (4) None of these

134. The order of increasing bond dissociation enthalpy of H-H, D-D and F-F molecules is _____.
    (1) H–H < D–D < F–F   (2) F–F < H–H < D–D   (3) F–F < D–D < H–H   (4) D–D < H–H < F–F

135. Which of the following anions is present in the chain structure of silicates?
    (1) $\left(Si_2O_5^{2-}\right)_n$ (2) $\left(SiO_3^{2-}\right)_n$ (3) SiO_n^{4-} (4) $Si_2O_7^{6-}$

136. H_3BO_3 is
    (1) Monobasic and weak Lewis acid.   (2) Monobasic and weak Brønsted acid.
    (3) Monobasic and strong Lewis acid.   (4) Tribasic and weak Brønsted acid.

137. Percentage of lead in lead Pencil is _____.
    (1) Zero   (2) 20   (3) 80   (4) 70

138. On mixing certain alkane with chlorine and irradiating it with U.V light, it forms only one monochloroalkane. The alkane is
    (1) Isopentane.   (2) Neopentane.   (3) Propane.   (4) Pentane.

139. The chemical reagent used to detect the presence of phenol in a given sample of organic compound is
    (1) Tollen's reagent in presence of alkali.
    (2) Neutral ferric chloride solution.
    (3) $(NaOH+I_2)$ solution.
    (4) Sodium Hydrogen Carbonate (Bicarbonate Test).

140. The gases present in atmosphere that causes Greenhouse effect are
     (1) Carbon Dioxide, Oxygen and Nitrogen.
     (2) Carbon dioxide, Sulphur dioxide and Methane.
     (3) Nitrous oxide, Oxygen, and Water vapours.
     (4) Methane, Water vapours and Carbon dioxide.

141. Structurally a biodegradable detergent should contain a
     (1) Normal alkyl chain.   (2) Branched alkyl chain.
     (3) Phenyl side chain.   (4) Cyclohexyl side chain.

142. Lithium metal crystallises in a B.C.C structure. If the length of the side of the unit cell of lithium is 351 pm, the atomic radius of the lithium will be
     (1) 151.8 pm.   (2) 75.5 pm.   (3) 300.5 pm.   (4) 240.8 pm.

143. A 5.25% solution of substance is isotonic with 1.5% solution of urea (molar mass = 60 g mol^{-1}) in the same solvent. If the densities of both the solution are assumed to be equal to 1.0 g cm^{-3}, molar mass of the substance will be _____.
     (1) 105.0 g mol^{-1} (2) 210.0 g mol^{-1} (3) 90.0 g mol^{-1} (4) 115.0 g mol^{-1}

144. The correct order of equivalent conductance at infinite dilution among LiCl, NaCl and KCl is _____.
     (1) LiCl > NaCl > KCl (2) NaCl > KCl > LiCl (3) KCl > NaCl > LiCl (4) LiCl > KCl > NaCl

145. For a first order reaction
     (1) the degree of dissociation is equal to $(1-e^{-kt})$.
     (2) a plot of reciprocal concentration of the reactant Vs. time gives a straight line.
     (3) the time taken for the completion of 75% reaction is thrice the $t_{1/2}$ of the reaction.
     (4) the pre-exponential factor in the Arrhenius equation has the dimension of kJ $mol^{-1}s^{-1}$.

146. Which of the following barium salts is soluble in water?
     (1) Barium Sulphate   (2) Barium Carbonate   (3) Barium Nitrate   (4) Barium Phosphate

147. A gas can be liquefied
     (1) below its critical temperature.   (2) above its critical temperature.
     (3) at its critical temperature.   (4) at any temperature.

148. Fac-Mer isomerism is associated with which one of the following complexes (M=central metal)?
     (1) $[M(AA)_2]$ (2) $[MA_3B_3]$ (3) $[M(AA)_3]$ (4) $[MA_4B_2]$

149. $(CH_3)_3CMgBr$ on reaction with D_2O produces _____.
     (1) $(CH_3)_3CD$ (2) $(CH_3)COD$ (3) $(CD_3)_3CD$ (4) $(CD_3)_3COD$

150. Hybridization of nitrogen in pyridine is _____.
    (1) sp^3d (2) sp^3 (3) sp^2 (4) sp

151. The IUPAC name of the compound shown in the figure is
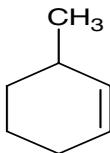
    (1) 1-methylcyclohex-5-ene.   (2) 6-methyl cyclohexene.
    (3) 1-methylcyclohex-2-ene.   (4) 3-methylcyclohexene.

152. The function of $AlCl_3$ in Friedal Craft's reaction is to
    (1) produce nucleophile.   (2) produce attacking electrophile.
    (3) absorb water.   (4) absorb HCl.

153. If two compounds have same empirical formula but different molecular formulae, they must have
    (1) same viscosity.   (2) same vapor pressure.
    (3) different percentage composition.   (4) different molecular weights.

154. The C-H bond length is longest in _____.
    (1) C_2H_2 (2) C_2H_4 (3) C_2H_6 (4) $C_2H_2Br_2$

155. The final product in the recation $CH_2 = CH_2 \xrightarrow{O_2,Ag} (X) \xrightarrow{473K} Y$ is
    (1) Ethylene glycol.   (2) Ethanol.   (3) Epoxyethane.   (4) None of these

156. Among the following the least reactive aldehyde is _____.
    (1) C_2H_5CHO (2) C_6H_5CHO (3) CH_3CHO (4) HCHO

157. In the following reaction
    $CH_3COOH + X \xrightarrow{Conc.H_2SO_4} Y + CO_2 + N_2$, X and Y are respectively
    (1) NH_3 and CH_3CONH_2 (2) NH_3 and CH_3NH_2
    (3) HN_3 and CH_3NH_2 (4) HN_3 and CH_3CONH_2

158. Ethyl isocyanide on hydrogen in acidic medium generates
    (1) Methylamine salt and ethanoic acid.
    (2) Ethanoic acid and ammonium salt.
    (3) Propanoic acid and ammonium salt.
    (4) Ethylamine salt and methanoic acid.

159. Natural rubber is a polymer of
    (1) Isoprene.   (2) Phenol.   (3) Ethylene.   (4) Vinyl chloride.

160. Ester used as a medicine is
    (1) Methyl salicylate.   (2) Ethyl benzoate.   (3) Methyl acetate.   (4) Ethyl acetate.

161. Which of the following has largest number of atoms?
    (1) 1g of Cu   (2) 0.5 mole of Cu   (3) 0.635 g of Cu   (4) 0.25 mole of Cu

162. The spin magnetic moment of the cobalt in the compound $Hg[Co(SCH)_4]$ is _____.
    (1) $\sqrt{24}$ (2) $\sqrt{14}$ (3) $\sqrt{15}$ (4) $\sqrt{8}$

163. The correct order of the electron affinity of the elements of the oxygen family in the periodic table is _____.
    (1) S > Se >O   (2) O > S >Se   (3) Se> S >O   (4) S > O>Se

164. The number of the coordinate bond in HF_2^- is/are _____.
    (1) 1   (2) 0   (3) 2   (4) 1 or 2

165. In the reaction A (g) + 3 B (g) $\Leftrightarrow$ 4 C (g), initial concentration of A is equal to that of B. The equilibrium concentration of A and C are equal. The equilibrium constant (K_c) is equal to ____.
    (1) 8   (2) 0.8   (3) 0.008   (4) 1/8

166. Which of the following is a compound whose 0.1 M solution is basic?
    (1) Sodium Acetate.   (2) Ammonium Acetate.
    (3) Ammonium Chloride.   (4) Ammonium Sulphate.

167. The critical temperature of water is higher than that of O_2 because the H_2O molecule has _____.
    (1) V-shape   (2) Fewer electrons than O_2
    (3) Dipole-moment   (4) Two covalent bonds

168. Glass is a
    (1) gel.   (2) polymeric Mixture.
    (3) microcrystalline solid.   (4) super cooled liquid.

169. Which is not a colligative property?
    (1) Elevation of boiling point   (2) Osmotic pressure
    (3) Depression of freezing point   (4) Lowering of vapor pressure

170. The highest electrical conductivity of the following aqueous solution is of
     (1) 0.1 M Fluoroacetic acid.   (2) 0.1 M Chloroacetic acid.
     (3) 0.1 M Acetic acid.   (4) 0.1 M Difluoroacetic acid.

171. Hydrogen bomb is based on the principle of
     (1) natural radioactivity.   (2) nuclear fusion.
     (3) nuclear fission.   (4) artificial radioactivity.

172. The bond angle and dipole moment of water are respectively _____.
     (1) 109.5° and 1.84 D   (2) 104.5° and 1.84 D
     (3) 102.5° and 1.56 D   (4) 107.5° and 1.56 D

173. Which of the following ore contains both Cu and Fe?
     (1) Malachite   (2) Cuprite   (3) Chalcopyrites   (4) Chalcocite

174. The H-O-H angle in water molecule is _____.
     (1) 45°   (2) 105°   (3) 90°   (4) 115°

175. Several blocks of magnesium are fixed to the bottom of a ship to
     (1) prevent puncturing by undersea rocks.   (2) prevent action of water and salt.
     (3) make the ship lighter.   (4) keep away the sharks.

176. The correct order of increasing C-O bond length of CO, CO_2, CO_3^{2-} is _____.

     (1) $CO > CO_2 > CO_3^{2-}$ (2) $CO > CO_3^{2-} > CO_2$

     (3) $CO_2 > CO_3^{2-} > CO$ (4) $CO_3^{2-} > CO_2 > CO$

177. Boiling/melting point of following hydride follow the order _____.
     (1) $SbH_3 > AsH_3 > PH_3 > NH_3$ (2) $SbH_3 > NH_3 > AsH_3 > PH_3$
     (3) $SbH_3 < AsH_3 < PH_3 < NH_3$ (4) $AsH_3 > SbH_3 > PH_3 > NH_3$

178. Which of the following is paramagnetic compound?
     (1) KO_2 (2) Na_2O_2 (3) O_3 (4) N_2O

179. Shape and hybridization of IF_5 respectively are _____.
     (1) Pentagonal pyramidal, sp^3d^3 (2) Square pyramidal, sp^3d^2
     (3) See saw, sp^3d (4) Trigonal bipyramidal, sp^3d

180. Xenon hexafluoride reacts with Silica to form to Xenon Compound 'X'. The oxidation state of Xenon in 'X' is _____.
     (1) +6   (2) +4   (3) +2   (4) 0

181. World Cancer Day is held on _____ every year to raise awareness of cancer.
    (1) February 4   (2) March 4   (3) April 4   (4) May 4

182. Whom did Serena Williams defeat in the final to win the Australian Open 2015 Women's Singles title?
    (1) Venus Williams   (2) Maria Sharapova   (3) Ekaterina Makarova (4) None of these

183. Which technology giant became the first company in the world to reach a market value of $700 billion?
    (1) Microsoft   (2) Google   (3) Apple   (4) Facebook

184. Which Indian Golfer has won the Malaysian Open 2015?
    (1) Jeev Milkha Singh (2) Arjun Atwal   (3) Anirban Lahiri   (4) Jyoti Randhawa

185. Saina Nehwal won the Syed Modi International India Grand Prix Gold badminton title 2015 in the women's singles category by defeating world champion Carolina Marin of
    (1) Spain.   (2) Denmark.   (3) Malaysia.   (4) Taiwan.

186. Airport Council International (ACI) has ranked_____ as the world's best performing airport in the 25-40 million passengers per annum (MPPA) category for the year 2014.
    (1) Rajiv Gandhi International Airport, Hyderabad
    (2) Bengaluru International Airport, Bengaluru
    (3) IGI Airport, New Delhi
    (4) Chennai International Airport

187. _____became the first batsman to hit double century in Cricket World Cup history.
    (1) Chris Gayle   (2) Rohit Sharma   (3) Virender Sehwag   (4) Martin Guptill

188. Senior Journalist Vinod Mehta who passed away on 8 March 2015 was associated with which of the following magazines?
    (1) Outlook   (2) India Today   (3) The Week   (4) Tehelka

189. Indian Railways has signed an MoU with _____to raise ₹1.5 lakh crore for financing the development of its various commercially viable infrastructure projects.
    (1) LIC of India   (2) World Bank   (3) State Bank of India (4) NHAI

190. Who among the following has been selected as the Brand Ambassador for the North East Region by the Indian Government?
    (1) Baichung Bhutia   (2) Mary Kom
    (3) Sarita Devi   (4) Somdev Devvarman

191. The mass nesting of Olive Ridley sea turtles, an endangered species happens in which Indian state?

    (1) Odisha   (2) West Bengal   (3) Andhra Pradesh   (4) Tamil Nadu

192. _____ has acquired the shopping search engine TheFind.

    (1) Facebook   (2) Google   (3) Yahoo   (4) Twitter

193. National Photography Awards in India are given by Ministry of

    (1) Information & Broadcasting.   (2) Human Resource Development.
    (3) Skill Development & Entrepreneurship.   (4) Tourism.

194. Who has authored the book "Indian Parliamentary Diplomacy – Speaker's Perspective"?

    (1) Meira Kumar   (2) Shivraj Patil
    (3) Somnath Chatterjee   (4) Manohar Joshi

195. India's indigenously developed Beyond Visual Range (BVR) air-to-air missile _____ was successfully tested in March 2015 from a Sukhoi-30 fighter aircraft.

    (1) Astra   (2) Shastra   (3) Prithvi   (4) Agni

196. National Green Tribunal (NGT) has announced a fine of ₹_____ on individuals spotted littering or throwing waste on the railway platforms and tracks.

    (1) 500   (2) 1000   (3) 3000   (4) 5000

197. Who among the following won the best actress award in the 62nd National Film Awards announced in March 2015?

    (1) Kangana Ranaut   (2) Alia Bhatt   (3) Tabbu   (4) Baljinder Kaur

198. In March 2015, NASA's curiosity rover has found evidence of _____ on Mars.

    (1) Oxygen   (2) Nitrogen   (3) Hydrogen   (4) plutonium

199. Which is the only country in the world where the Prime Minister, Parliament speaker, Leader of the opposition, Deputy Leader of the house, and a major opposition leader are all women?

    (1) Denmark   (2) Bangladesh   (3) Spain   (4) None of these

200. Who is the richest man of India as per the Forbes Rich list 2015?

    (1) Anil Ambani   (2) Mukesh Ambani   (3) Shiv Nadar   (4) Lakshmi Mittal

INSTRUCTIONS TO CANDIDATE

1. **Please do not open this Question Booklet until asked to do so.**

2. **Do not leave the examination hall until the test is over and permitted by the invigilator.**

3. Fill up the necessary information in the space provided on the cover of the Question Booklet and the Answer Sheet before commencement of the test.

4. Check for the completeness of the Question Booklet immediately after opening. There are 24 pages including the cover pages.

5. The duration of the test is **3 hours**.

6. There are **200 questions**. Each question has four answer options marked (1), (2), (3) and (4).

7. Answers are to be marked on the OMR Answer Sheet, which is provided separately.

8. Choose the most appropriate option and darken the oval/circle completely, corresponding to (1), (2), (3) or (4) against the relevant question number.

9. Use only **HB pencil** to darken the oval/circle for answering.

10. Do not darken more than one oval/circle against any question, as scanner will read such marking as wrong answer.

11. If you wish to change any answer, erase completely the one already marked and darken the fresh oval/circle with an **HB** pencil.

12. All questions carry equal marks. **There is No Negative Marking.**

13. Rough work, if any, is to be done on the Question Booklet only. No separate sheet will be provided/used for rough work.

14. **Calculator, Mobile, Electronic Gadgets, etc., are not permitted inside the examination hall.**

15. Candidate using unfair means in the test will be disqualified.

16. Appropriate civil/criminal proceedings will be instituted against the candidate taking or attempting to take this Question Booklet or part of it outside the examination hall, besides cancellation of his/her candidature.

17. The right to exclude any question(s) from final evaluation rests with the testing authority.

18. Do not seek clarification on any item in the question booklet from the test invigilator. Use your best judgment.

THIS QUESTION BOOKLET AND OMR ANSWER SHEET ARE TO BE RETURNED ON COMPLETION OF THE TEST.