JMI Class 11 Science - 2018

1. If in covering a distance of 30km, A takes 2 hours more than B.If A double his speed,he would take 1hr less than of B to run the same distance.

(a) 6 km/hr (b) 5 km/hr
(c) 6.5 km/hr (d) 7.5 km/hr

2. m and n are two integers such that the roots of the equation $(x^2+mx+20)(x^2+17x+n)=0$ are negative integers. Then smallest possible value of (m+n) is....

(a) 32 (b) 24
(c) 25 (d) 20

3. A line makes 60° with X-axis and passes through the point $(0,4\sqrt{3})$ distance between the points at which it intersects both the axes is

(a) 1.5
(b) 6 units
(c) $6\sqrt{3}$ units
(d) $8\sqrt{2}$ units

4. If the ratio of the 19th term to the 22nd term of an AP is 22: 29, then ratio of sum of its 7 terms to the sum of its 10 terms will be.

(a) 1:2 (b) 3:4
(c) 2:5 (d) 91:95

5. If P and Q are two points having coordinates (-2,-2) and (2, 4) respectively. If it is given that $PO = \frac{7}{3}$ PX where X lies on PQ then coordinates of point X

(a) $\left(\frac{-2}{7}\right),\left(\frac{-20}{5}\right)$ (b) $\left(\frac{-2}{7},\frac{4}{7}\right)$
(c) (3,4) (d) $\left(\frac{-1}{7},\frac{2}{7}\right)$

6. PQR is a triangle right angled at P. If PS is perpendicular drawn from P on QR. then which of the following is true

(a) $\frac{1}{PQ^2}+\frac{1}{RP^2}=\frac{1}{PS^2}$ (b) $\frac{1}{PR^2}+\frac{1}{PS^2}=\frac{1}{QS^2}$
(c) $\frac{1}{PQ^2}+\frac{1}{RS^2}=\frac{1}{PR^2}$ (d) $\frac{1}{PS^2}+\frac{1}{PQ^2}=\frac{1}{QR^2}$

7. If $\sin\theta-\cos\theta=\sqrt{3}$, then $\tan\theta+\cot\theta=$

(a) $\frac{1}{\sqrt{3}}$ (b) 1
(c) – 1 (d) 0

08. The angle of elevation of a cloud from a point 20 m above a lake is 30° and the angle of depression of the reflection of cloud in the lake is 60m.Height of the cloud is.

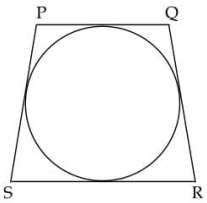
(a) 20 m (b) 60 m
(c) 30 m (d) 40 m

09. The value of n for which the expression $x^4+4x^3+nx^2+4x+1$ becomes a perfect square is

(a) 5 (b) 4
(c) 3 (d) 6

10. A circle is inscribed in trapezoid PQRS. If PS = QR = 25 cm. PQ = 18 cm and SR = 32 cm. the length of the diameter of the circle?

(a) 24cm
(b) 25cm
(c) 20cm
(d) 14cm



Read the following passages and answer the question numbers 11-20

"Science cannot reduce the magic of a sunset to arithmetic, nor can it express friendship with a formula" observed the medical researcher. Dr. Louis Ours. He added, "Also beyond science's mastery of nature are love and laughter. Pain and loneliness and insights into truth and hearty." This distancing of science from human conidian perhaps explains why most foreign tourists visiting Britain flock predictably to see the hallowed homes of playwrights, writers and poets, but choose to ignore the habitats where its eminent scientists lived and worked

11. Why is it that science cannot express friendship with a formula?

(a) Science and friendship cannot co-exist.
(b) Friendship is unknown to scientists
(c) Friendship is beyond science's mastery
(d) It is an abstract term which cannot be grappled by science.

12. The word 'magic' refers to:

(a) Evening duck
(b) The sunrise
(c) Solar and lunar eclipse
(d) Setting of sun with all its beauty

13. Which of the following are beyond science's reach?

(a) Love and laughter, pain and loneliness
(b) Derivation of a formula
(c) Complexity of time and tide
(d) Working of the mind

14. The verb 'flock' refers to:

(a) Tourists in Britain
(b) Local people
(c) Large number of foreign tourists visiting homes of playwrights, poets and writers.
(d) Indian tourists

15. Fill in the blanks with appropriate conjunctions: Not only he .....his father was also present.?

(a) Is (b) But
(c) Can (d) Also

16. Fill in the blanks with suitable form of verbs given in brackets: We shall go out as soon as you ..... ready.

(a) are (b) were
(c) was (d) has

17. Which of the following is a synonym of habitat?

(a) Atmosphere (b) Liveliness
(c) Abode (d) Survival

18. The author of the given passage is a:

(a) Scientist (b) Playwright
(c) Philosopher (d) Journalist

19. According to the given passage, what has grown distant?

(a) Tourists and scientists
(b) Tourists and poets
(c) Love and laughter
(d) Science and human condition

20. The word 'eminent' means:

(a) Intelligent (b) Distinguished
(c) Imminent (d) Curious

Specify types of sentences in questions 21-24.

21. India is a sovereign, secular, socialist, democratic, republic

(a) Assertive Sentence
(b) Exclamatory Sentence
(c) Interrogative Sentence
(d) Optative Sentence

22. Get out of this room.

(a) Assertive Sentence
(b) Exclamatory Sentence
(c) Interrogative Sentence
(d) Imperative Sentence

23. Shall we go out for a walk?

(a) Assertive Sentence
(b) Exclamatory Sentence
(c) Interrogative Sentence
(d) Optative Sentence

24. What a lovely rose I

(a) Assertive Sentence
(b) Exclamatory Sentence
(c) Interrogative Sentence
(d) Optative Sentence

How can you improve the underline part of the following sentences? (Q:25-28)

25. <u>What happens to</u> all those travelers on the ship was not known

(a) What happen to
(b) That is what happens to
(c) What happened to
(d) No improvement

26. I have been telling her that she better <u>consulted</u> a good doctor

(a) Consults (b) Consulting
(c) Been consulting (d) No improvement

27. Before 1 could stop him, the boy <u>was throwing</u> the box down the stairs

(a) Were throwing (b) Threw
(c) Did throw (d) No improvement

28. The sentence "Please wait for me." Is:

(a) Declarative
(b) Imperative
(c) Exclamatory
(d) Interrogative

29. Aristotle said, "Man is a social animal"

(a) Aristotle said that man is a social animal.
(b) Aristotle said that man was a social animal.
(c) Aristotle proclaimed that man was a social animal.
(d) Aristotle proclaimed that man was a social animal.

30. "What do you expect from me?" Madhavi said to me.

(a) Madhavi exclaimed what was expected from me by her.
(b) Madhavi wanted to know what I expected from myself.
(c) Madhavi said that what was expected from me by her.
(d) None of the above.

31. "Don't neglect your health". Ram said to me.

(a) Ram said to me not to neglect my health.
(b) Ram said to me that my health should not be neglected.
(c) Ram advised me not to neglect my health.
(d) None of the above.

Specify the tenses of question numbers 32-34

32. The engineers have built a marvelous bridge.

(a) Simple Present Tense
(b) Present Perfect Continuous Tense
(c) Past Prefect Tense
(d) Present Perfect Tense

33. I am washing clothe's right now.

(a) Simple Present Tense
(b) Present Perfect Continuous Tense
(c) Past Prefect Tense
(d) Present Continuous Tense

34. He was always talking about his greatness all the time

(a) Simple Present Tense
(b) Present Perfect Continuous Tense
(c) Past Continuous Tense
(d) Present Perfect Tense

35. Change into Past Perfect Tense Jaya is buying a new car.

(a) Jaya was buying a new car.
(b) Jaya bought a new car.
(c) Jaya will have bought a new car.
(d) Jaya had bought a new car.

36. The largest state of India in terms of area (as per the census 2011) is

(a) Uttar Pradesh (b) Rajasthan
(c) Madhya Pradesh (d) Maharastra

37. Who won the 2017 Women's Hockey Asia Cup held in the month of October-November 2017 in Japan?

(a) China (b) Japan
(c) Singapore (d) India

38. Which of the following countries comes in the African continent?

(a) Egypt (b) Syria
(c) Jordan (d) Lebanon

39. In which year first five Year Plan was launched in India?

(a) 1947 (b) 1950
(c) 1951 (d) 1952

40. Which one of the following scheme has NOT been launched by government of India?

(a) Start-up India (b) Stand up India
(c) Fly-India (d) Skill-India

41. The era of which Mughal Emperor is considered as 'Golden Age' for Architecture?

(a) Akbar (b) Shahjahan
(c) Jehangir (d) Aurangzed

42. Who was the President of the Constituent Assembly of Independent India?

(a) Dr. Rajendra Prasad
(b) Maulana Abul Kalam Azad
(c) Dr. Bhimrao Ambedkar
(d) Jawaharlal Nehru

43. The Nobel Prize 2017 in the field of literature was awarded to

(a) Bob Dylan (b) Patrick Modiano
(c) Kazuo Ishiguro (d) Svetlana Alexievich

44. 'BIOS' is an acronym for?

(a) Basic Instruction output set
(b) Basic Input or gamzational system
(c) Basic Input Output System
(d) Basic Industry Operating System

45. Xerophthalmia occurs due to deficiency of

(a) Vitamin A (b) Vitamin B
(c) Vitamin C (d) Vitamin D

46. The following reaction is an example of a
$4NH_3+5O_2 \Rightarrow 4NO+6H_2O$
(I). Displacement reaction
(ii). Combination reaction
(iii). Redox reaction
(iv). Neutralisation reaction
Choose the correct options:

(a) (i) and (iv)
(b) (ii) and (iii)
(c) (i) and (iii)
(d) (iii) and (iv)

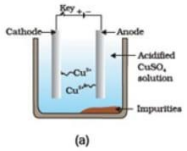
47. Three beakers labelled as A.B and C and each containing 25 ml of water were taken .A small amount of NaOH4 an hydrous CuSO4 and NaCl were added to the beakers A.B and C respectively.It was observed that there was an increase in the temprature of the solutions contained in beakers A and B, whereas in case of beakers C, the temprature of the solution falls.Which one of the following statement(s) is (are) correct?
(i).In beakers A and B, exothermic process has occurred.
(ii)In beakers A and B, endothermic process has occurred.
(iii)In beaker C exothermic process has occurred.
(iv)In beaker C endothermic process has occurred.

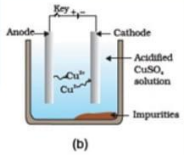
(a) (I) only (b) (ii) only
(c) (i) and (iv) (d) (ii) and (iii)

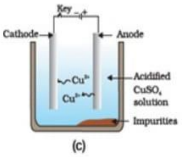
48. Which of the following does not involve a chemical reaction?

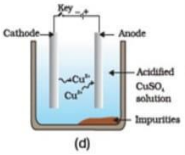
(a) Melting of candle wax on heating
(b) Process of respiration
(c) Burning of candle wax when heated
(d) Digestion of food in our body

49. The engineers have built a marvelous bridge.

(a) 

(b) 

(c) 

(d) 

50. A sample of soil is mixed with water and allowed to settle. The clear supernatant solution turns the pH paper yellowish-orange. Which of the following would change the colour of this pH paper to greenish-blue?

(a) Lemon Juice (b) Vinegar
(c) Common Salt (d) An antacid

51. Match the important chemicals given in Column (A) with the Chemical formulae given in Column (B)

Column A	Column B
(A) Acetic acid	**(i) Lemon and orange**
(B) Citric acid	**(ii) Sour milk [curd]**
(C) Lactic acid	**(iii) Vinegar**
(D) Oxalic acid	**(iv) Tomato**

(a) A---(iii), B---(i), C---(iv), D---(ii)
(b) A---(iii), B---(i), C---(ii), D---(iv)
(c) A---(ii), B---(i), C---(iii), D---(iv)
(d) A---(iv), B---(i), C---(ii), D---(iii)

52. Esters react in the presence of an acid or a base to give back the alcohol and

(a) Hydrochloric acid (b) Nitric acid
(c) Ethanoic acid (d) Carboxylic acid

53. The composition of aqua-regia is: -

(a) Dil.HCl:Cone.HNO_3–3:1
(b) Cobce.HCl:Dil.HNO_3-3:1
(c) Cone.HCl:Cone.HNO_3–3:1
(d) Dil.HCl:Dil.HNO_3–3:1

54. The electronic configurations of three elements X, Y and Z are X – 2. 8; Y – 2, 8, 7 and Z – 2, 8, 2. Which of the following is correct?

(a) X is a metal
(b) Y is a metal
(c) Z is a non-metal
(d) Y is a non-metal and Z is a metal

55. Oils on treating with hydrogen in the presence of palladium or nickel catalyst form fats. This is an example of.

(a) Addition reaction
(b) Substitution reaction
(c) Displacement reaction
(d) Oxidation reaction

56. An organic compound 'X' has the molecular formula $C_2H_4O_2$.It has a pleasant smell but does not turn blue litmus red.It has structured formula

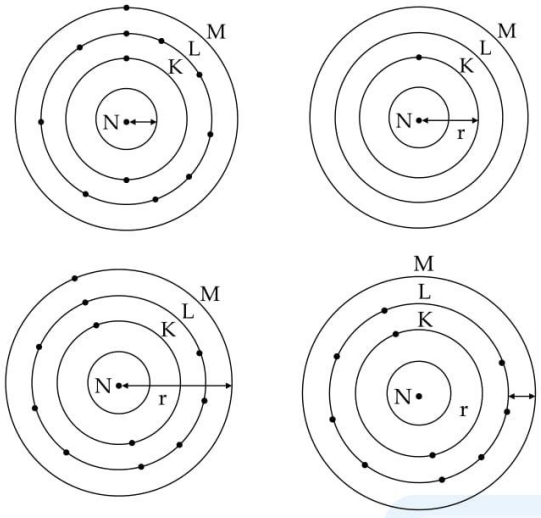
(a) $CH_3-\overset{O}{\overset{||}{C}}-OH$ (b) $H-\overset{O}{\overset{||}{C}}-OCH$

(c) Both of them (A & B) (d) None of the above

57. Ethanoic acid was added to sodium bicarbonate solution and the gas evolved was tested with a burning splinter. The following four observations were reported. Identify the correct observation.

(a) The flame extinguishes and the gas does not burn.
(b) The gas does not burn but the splinter burns with pop sound
(c) The gas burns with pop sound and the flame gets extinguished.
(d) The gas burns with a blue flame and the splinter burns brightly.

58. Which one of the following depicts the correct representation of atomic radius (r) of an atom?



(a) (i) and (ii) (b) (ii) and (iii)
(c) (iii) and (iv) (d) (i) and (iv)

59. Arrange the following elements in the order of their increasing nonmetallic character: Li, O, C, Be, F.

(a) F < O < C< Be < Li (b) Li < Be < C < O < F
(c) F < O < Be < C < Li (d) F < O < Be < C < Li

60. Element X forms a chloride with the formula XCl_2. Which is a solid with a high melting point. X would most likely be in the same group of the parodic table as

(a) Na (b) Mg
(c) Al (d) Si

61. Lipase enzyme is secreted by

(a) Liver (b) Oxynitic cells of
(c) Pancreas (d) Process of oxidation

62. In Human, Voice box is known as

(a) Pharynx (b) Larynx
(c) Syrinx (d) Trachea

63. Pulmonary arteries arises from

(a) Right Ventricle (b) Left Ventricle
(c) Right Lung (d) Left lung

64. Salivation is controlled by

(a) Cerebrum
(b) Medulla
(c) Cerebellum
(d) Hypothalamus

65. Which hormone causes wilting of leaves?

(a) Abscisic acid (b) Auxin
(c) Cytokinins (d) Gibberelling

66. Which hormone regulates Protein Metabolism?

(a) Parathyroid (b) Thyroid
(c) Thymus (d) Adrenal Gland

67. Hyphae is the part of

(a) Bryophyllum (b) Planaria
(c) Jasmine (d) Rhizopus

68. Gonorrhoea caused by

(a) Bacteria (b) Virus
(c) Fungi (d) Protozoan

69. The phenotypic ratio of a dihybrid cross in F_2 generation

(a) 3: 1 (b) 9: 3: 1
(c) 9: 3: 3: 1 (d) 6: 3: 3: 1

70. Example of artificial selection is

(a) Wings of butterfly
(b) Evolution of Wild cabbage
(c) Evolution of eye
(d) Sex determination

71. Which ecological pyramid is always upright?

(a) pyramid of Mass
(b) Pyramid of Energy
(c) Pyramid of Number
(d) Both Pyramids of Mass and Number

72. Accumulation of pesticides such as DDT in the food chain in increasing amount at each higher trophic level is known as

(a) Eutrophication
(b) Tropical magnification
(c) Successive pollution
(d) Bio-magnification

73. The unit of measuring momentum is

(a) $kg.ms^{-2}$ (b) $Nm^2 kg^2$
(c) $kg.ms^{-1}$ (d) ms^{-1}

74. A body of mass 5kg is moving with velocity 'V' collided with another body of mass 10kg moving with velocity of $2ms^{-1}$ in opposite direction. After collision both the bodies come to rest instantaneously. The velocity v is

(a) 0.4 ms^{-1} (b) 4.0 ms^{-1}
(c) 0.8 ms^{-1} (d) 2.0 ms^{-1}

75. If 10 g of hydrogen and 64g of oxygen were filled in a steel vessel and exploded, the amount of water produced in this reaction will be;

(a) 1 mol (b) 2 mol
(c) 4 mol (d) 3 mol

76. Which method is used to separate drugs from blood?

(a) Fractional (b) Crystallisation
(c) Chromatography (d) Distillation

77. Which gas present in air has the highest boiling point?

(a) Oxygen (b) Nitrogen
(c) Argon (d) Hydrogen

78. If the concentration of glucose ($C_6H_{12}O_6$) in blood is 0.9 g L^{-1}, what will be the molarity of glucose in blood?

(a) 5M (b) 50M
(c) 0.005M (d) 0.5

79. In the commercial electrochemical process for aluminium extraction the electrolyte used is.

(a) Al $(OH)_3$ in NaOH solution
(b) An aqueous solution of $Al_2(SO_4)_3$
(c) A molten mixture of Al_2O_3 and Na_3AlF_6
(d) A molten mixture of Al_2O_3 and $Al(OH)_3$

80. Which one of the following quantity is transmitted by a wave

(a) Mass (b) Charge
(c) Wavelength (d) Energy

81. In gases the charge carriers are:

(a) Electrons (b) Ions
(c) Protons (d) Neutron

82. Varying current without much loss of energy can be possible in:

(a) Ammeter (b) Voltmeter
(c) Rheostat (d) A variable source

83. A magnet AB is broken into two pieces. What is the polarity of A, B, C, and D?

(a) A, D: North and B, C: South
(b) A, B: North and C, D: South
(c) A, C: North and B, D: South
(d) A, D: South and B, C: North

84. As we move away from a current carrying conductor, the spacing between the magnetic lines of force:

(a) Decrease
(b) Increases
(c) $\frac{h+d}{3}$
(d) Remains at equal distances

85. A ray of light is travelling from medium 1 to medium 2. On what factors n_{21} depends?

(a) Wavelength of light wave
(b) Nature of medium 1 and medium 2
(c) Both of above
(d) Nature of medium 1 only

86. The property of persistence of vision is used in:

(a) Short sightedness (b) Long sightedness
(c) Cinematography (d) Colour vision

87. Name the scientist who first obtained the spectrum of sunlight using a prism:

(a) Sir Isaac Newton (b) Thomas alyaaddia
(c) MichaleFarada (d) Leonhard Euler

88 Three students measured the focal length of a convex lens using parallel rays from a distant abject. All of them measured the distance between the lens and the inverted image on the screen:
Student A saw a sharp image on the screen and labelled the distance as f_1
Student B saw a slightly larger blurred image on the screen and labelled the distance as f_2
Student C saw a slightly smaller blurred image on the screen and labelled the distance as f_3
The relation between the three measurements would most likely be:

(a) $f_1 = f_2 = f_3$ (b) $f_1 < f_2$ and f_3
(c) $f_3 < f_1 < f_2$ (d) $f_1 < f_2$ and $f_1 = f_3$

89. A positively charged particle moving due east enters a region of uniform magnetic field directed vertically upwards. The particle will:

(a) Get deflected in vertically upward direction.
(b) Move in circular path with an increased speed.
(c) Move in circular path with a decreased speed.
(d) Move in a circular path with uniform speed.

90. Read the statement 1 and statement 2 carefully to mark the correct option out of the options given below. Statement 1: If a wire is stretched to increase its length x times then its resistance also increases by x times. Statement 2: Resistance of a conductor directly depends upon the length of the conductor.

(a) If both statement 1 and reason are true and the statement 1 is the correct explanation of the statement 2
(b) If both statement 1 and statement 2 are true but the statement 1 is not the correct explanation of the statement 2
(c) If statement 1 is true but statement 2 is false.
(d) If statement 1 is false but statement 2 is true.

91. If $x^4 + x^3 + 8x^2 + ax + b$ is divisible by $x^2 + 1$, then values of a and b are

(a) a = 2, b = 3 (b) a = - 4, b = 6
(c) a = 3, b = -4 (d) a = 1, b = 7

92. Two dices are thrown simultaneously. What will be the probability of getting numbers with difference 0 and 1?

(a) 7/18 (b) 5/12
(c) 4/9 (d) 11/36

93. The average speed of a bicyclist, if he covers first 5km with a speed 15km/hr and next 5km with speed 10km/hr, would be

(a) 12.5 km/hr (b) 12 km/hr
(c) 15 km/hr (d) 6 km/hr

94. Average of 8 numbers is 20, that of the first two is 15.5 and that of the next 3 is 21 $\frac{1}{3}$, the 6th is less than the 7th by 4 and 7 less than the 8th. The last number is

(a) 32 (b) 35
(c) 25 (d) 28

95. If. $\sqrt[3]{\frac{x}{729}} + \sqrt[3]{\frac{8x}{729}} + \sqrt[3]{\frac{27x}{5832}} = 1$ Then the value of x is.

(a) 4 (b) 4
(c) 8 (d) 3

96. The ratio of sums of p and q terns of an AP is $p^2 : q^2$, then the ratio of its pth and qth terms will be

(a) p: q (b) $(2p - 1): (2q - 1)$
(c) $(2p^2 + 1): (2q^2 + 1)$ (d) $(2p^2 + 1): (2q^2 + 1)$

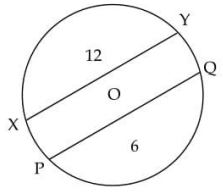
97. $\sin^2 5° + \sin^2 6° + \sin^2 7° + \ldots\ldots\ldots\ldots + \sin^2 85° =$

(a) 10.5 (b) 40.5
(c) 1 (d) 38

98. If $\tan\theta = a - \frac{1}{4a}$ then $\sec\theta - \tan\theta$ is equal to

(a) $-2a\frac{1}{2a}$ (b) $-\frac{1}{2a}, 2a$
(c) $\frac{1}{2a}, -a$ (d) $\frac{1}{2a}, 2a$

99. PQ and XY are two chords of a circle such that PQ = 6 cm and XY = 12 cm and PQ || XY. If the distance between the chords is 3 cm then the radius of the circle is?



(a) $3\sqrt{3}$ (b) $3\sqrt{5}$ cm
(c) $3\sqrt{5}$ cm (d) 5 cm

100. If a cylinder, cone and a sphere are of the same radius and same height. The ratio of their curved surface will be

(a) $4:\sqrt{5}:4$ (b) $1:\sqrt{3}:4$
(c) $\sqrt{}$ 3:4:n (d) n: $\sqrt{3}$:4

Answer Key

1	2	3	4	5	6	7	8	9	10
c	d	b	b	c	a	c	b	d	b
11	12	13	14	15	16	17	18	19	20
c	d	a	b	b	a	a	b	d	c
21	22	23	24	25	26	27	28	29	30
b	d	c	d	a	b	b	b	a	a
31	32	33	34	35	36	37	38	39	40
c	a	d	c	d	c	c	b	c	a
41	42	43	44	45	46	47	48	49	50
b	c	b	d	d	c	d	c	a	b
51	52	53	54	55	56	57	58	59	60
a	a	c	b	a	d	a	d	c	a
61	62	63	64	65	66	67	68	69	70
a	d	c	b	a	b	a	c	b	b
71	72	73	74	75	76	77	78	79	80
b	c	d	c	d	c	a	c	d	a
81	82	83	84	85	86	87	88	89	90
d	b	b	b	b	b	c	d	b	c
91	92	93	94	95	96	97	98	99	100
c	d	a	a	a	a	b	b	d	a