ATOMIC ENERGY CENTRAL SCHOOL NO. 2, MUMBAI

ACADEMIC SESSION – 2024-25

MULTIPLE CHOICE QUESTION EXAMINATION – 1 (MCQ – 1)

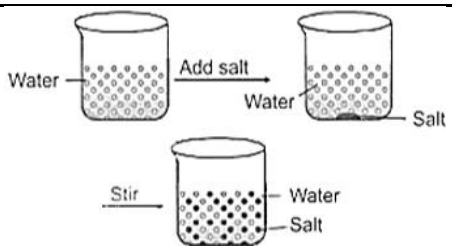
CLASS IX – MATHEMATICS/SCIENCE/SOCIAL SCIENCE

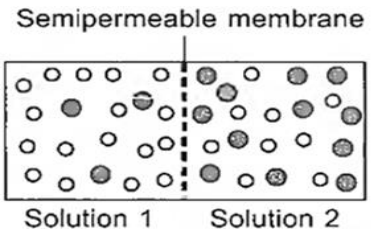
Time Allowed : 90 mins **Maximum Marks :** 90 **Date** : 29.04.2024

	Attempt all questions. There is no negative marking	
1	Which of the following is irrational? a) $0.14\overline{16}$ b) 0.14 c) $0.\overline{1416}$ d) 0.4014001400014...	**[1]**
2	If $\sqrt{5^n}$ = 125, then $5^{\sqrt[n]{64}}$ = a) $\frac{1}{5}$ b) 25 c) $\frac{1}{125}$ d) 625	**[1]**
3	$\sqrt{12} \times \sqrt{15}$ = a) 5 b) $5\sqrt{6}$ c) $6\sqrt{5}$ d) 6	**[1]**
4	The value of $\frac{3\sqrt{12}}{6\sqrt{27}}$ is a) $\sqrt{3}$ b) $\sqrt{2}$ c) $\frac{1}{3}$ d) $\frac{1}{2}$	**[1]**
5	The value of $64^{\frac{-1}{3}}\left(64^{\frac{1}{3}} - 64^{\frac{2}{3}}\right)$, is a) - 2 b) 1 c) - 3 d) $\frac{1}{3}$	**[1]**
6	If x is a positive real number and $x^2 = 2$, then x^3 = a) $\sqrt{2}$ b) $3\sqrt{2}$ c) $2\sqrt{2}$ d) 4	**[1]**
7	$2\sqrt{3} + \sqrt{3}$ is equal to a) $2\sqrt{6}$ b) $3\sqrt{6}$ c) 3 d) $3\sqrt{3}$	**[1]**
8	The ascending order of the surds $\sqrt[3]{2}, \sqrt[6]{3}, \sqrt[9]{4}$ is _____. a) $\sqrt[3]{2}, \sqrt[6]{3}, \sqrt[9]{4}$ b) $\sqrt[9]{4}, \sqrt[3]{2}, \sqrt[6]{3}$ c) $\sqrt[9]{4}, \sqrt[6]{3}, \sqrt[3]{2}$ d) $\sqrt[6]{3}, \sqrt[9]{4}, \sqrt[3]{2}$	**[1]**
9	If $\frac{3^{2x-8}}{225} = \frac{5^3}{5^x}$, then x = a) 4 b) 2 c) 5 d) 3	**[1]**
10	Which of the following is rational: a) $\sqrt{3}$ b) $\frac{4}{0}$ c) $\frac{0}{4}$ d) π	**[1]**
11	Which of the following numbers can be represented as non - terminating, repeating decimals? a) $\frac{137}{25}$ b) $\frac{3}{16}$ c) $\frac{39}{24}$ d) $\frac{3}{11}$	**[1]**

12	If $\sqrt{2} = 1.42$ then $\frac{1}{\sqrt{2}} =$? a) 0.705 b) 7.05 c) 0.75 d) 0.075	**[1]**
13	The value of $\frac{4\sqrt{12}}{12\sqrt{27}} is$ a) $\frac{1}{9}$ b) $\frac{2}{9}$ c) $\frac{4}{9}$ d) $\frac{8}{9}$	**[1]**
14	If $x = 3 + \sqrt{8}$, then the value of $\left(x^2 + \frac{1}{x^2}\right)$ is a) 32 b) 34 c) 6 d) 12	**[1]**
15	$\frac{125}{216}^{\frac{-1}{3}} =$ a) $\frac{6}{5}$ b) 125 c) $\frac{5}{6}$ d) 216	**[1]**
16	The simplest form of $0.12\overline{3}$ is a) none of these b) $\frac{37}{330}$ c) $\frac{41}{330}$ d) $\frac{41}{333}$	**[1]**
17	The simplest form of $0.5\overline{7}$ is a) $\frac{26}{45}$ b) $\frac{57}{99}$ c) $\frac{57}{100}$ d) $\frac{57}{90}$	**[1]**
18	Which of the following is an irrational number? (i) $\sqrt{7}$ (ii) $\sqrt{64}$ (iii) $\sqrt{\frac{4}{9}}$ (iv) $\frac{\sqrt{20}}{\sqrt{5}}$ a) Option (iv) b) Option (iii) c) Option (ii) d) Option (i)	**[1]**
19	Who was the first Mathematician to compute digits in the decimal expansion of π ? a) Aryabhatta b) Archimedes c) Dedekind d) Cantor	**[1]**
20	The value of $\frac{1}{1+\sqrt{2}} + \frac{1}{\sqrt{2}+\sqrt{3}} + \frac{1}{\sqrt{3}+\sqrt{4}} + \frac{1}{\sqrt{4}+\sqrt{5}} = \frac{1}{\sqrt{5}+\sqrt{6}} + \frac{1}{\sqrt{6}+\sqrt{7}} + \frac{1}{\sqrt{7}+\sqrt{8}} + \frac{1}{\sqrt{8}+\sqrt{9}}$ is ____ a) 2 b) 1 c) 0 d) 4	**[1]**
21	A solid has_____. a) 1 dimension b) 1 dimension c) 3 dimensions d) 0 dimension	**[1]**
22	A point C is called the midpoint of a line segment $\overline{AB}$ if a) AC + CB = AB b) C is an interior point of AB such that $\overrightarrow{AC} = \overrightarrow{CB}$ c) C is an interior point of AB d) $\overrightarrow{AC} = \overrightarrow{CB}$	**[1]**
23	Which of the following options has one fixed end point and can be extended in the other direction indefinitely? a) A line segment b) A line c) All of these d) A ray	**[1]**

24	Euclid's Postulate 1 is a) A terminated line can be produced definitely. b) A terminated line can be produced indefinitely. c) A straight line may be drawn from any one point to any other point. d) All right angles are equal to one another.	**[1]**
25	Which of the following is not a rectilinear figure? a) Square b) Rectangle c) Rhombus d) Circle	**[1]**
26	A pyramid is a solid figure, the base of which is a) only a rectangle b) any polygon c) only a square d) only a triangle	**[1]**
27	The number of end pointsa ray has a) 3 b) 0 c) 2 d) 1	**[1]**
28	Greek's emphasised on: a) Both Deductive reasoning and Inductive reasoning b) Inductive reasoning c) Practical use of geometry d) Deductive reasoning	**[1]**
29	The number of planes passing through 3 noncollinear points is a) 1 b) 4 c) 3 d) 2	**[1]**
30	The boundaries of surfaces are a) points b) lines and curves c) surfaces d) curves	**[1]**
31	On the basis of composition, matter is classified as a) Metal, non metal and metalloid b) Solution, suspension and colloid c) Element, metal and compound d) Element, compound and mixture	**[1]**
32	Which of the following represents the correct increasing order of the densities of given substances? a) Cotton < Air < Exhaust from chimneys < Iron < Honey b) Air < Cotton < Exhaust from chimneys < Iron < Honey c) Cotton < Exhaust from chimneys < Honey < Iron < Air d) Air < Exhaust from chimneys < Cotton < Honey < Iron	**[1]**
33	Which is compressible in nature? a) Sponge b) Wood c) Marble d) Stone	**[1]**
34	An experiment is performed as shown in the given figure.	**[1]**

	 The conclusion we can draw from the given experiment is that 1. Nature of matter is continuous 2. Matter is made up of particles 3. Particles of salt get into the spaces between the particles of water 4. Both Matter is made up of particles and Particles of salt get into the spaces between the particles of water a) Statement (iv) is correct. b) Statement (ii) is correct. c) Statement (i) is correct. d) Statement (iii) is correct.	
35	Spreading of fragrance of a burning incense stick in a room shows that a) Particles of matter have spaces between them. b) Particles of matter attract each other. c) Particles of matter are constantly moving. d) None of the above.	**[1]**
36	When we put some crystals of potassium permanganate in a beaker containing water, we observe that after sometime, the whole water turns pink. This is due to a) Brownian motion b) Melting c) Sublimation d) Diffusion	**[1]**
37	Select the following which has highest kinetic energy? a) Particles of water at 0 °C b) Particles of ice at 0 °C c) Particles of steam at 100 °C d) Particles of water at 100 °C	**[1]**
38	A few substances are arranged in the increasing order of **forces of attraction** between their particles. Which one of the following represents a correct arrangement? a) Air, sugar, oil b) Salt, juice, air c) Oxygen, water, sugar d) Water, air, wind	**[1]**
39	The two major gases present in the air are a) Nitrogen and Carbon dioxide. b) Nitrogen and Oxygen c) Hydrogen and Oxygen d) Nitrogen and Hydrogen	**[1]**
40	A diver is able to cut through water in a swimming pool. It illustrates that A. Particles of liquids have space in between them B. Particles of liquids possess kinetic energy C. Particles of liquids have weak attractive forces. D. Both Particles of liquids have space in between them and Particles of liquids have weak attractive forces. a) Sentence A is correct. b) Sentence B is correct. c) Sentence D is correct. d) Sentence C is correct.	**[1]**

41	Study the given figure carefully. In which direction the net movement of water will take place?  [Key : O Water molecule; ® Solute molecule] a) From solution 1 to solution 2 b) Both From solution 1 to solution 2 and From solution 2 to solution 1 c) From solution 2 to solution 1 d) No movement will take place	**[1]**
42	The statement 'cells arise only from pre - existing cells' was given by: a) Louis Pasteur b) Schwann c) Schleiden d) Rudolf Virchow	**[1]**
43	Living cells were discovered by a) A.V. Leeuwenhoek b) Robert Brown c) Robert Hooke d) R. Virchow	**[1]**
44	The technical term for the "Group of similar cells performing a specific function" is **:** a) Tissue b) Cell c) Organ system d) Organ	**[1]**
45	The process which occurs when dry raisins are soaked in water is called _____. (a) Osmosis (b) Endosmosis (c) Endocytosis (d) Diffusion	**[1]**
46	A cell will swell up if a) The concentration of water molecules in the surrounding medium is higher than water molecules concentration in the cell. b) The concentration of water molecules is the same in the cell and in the surrounding medium. c) The concentration of water molecules does not matter. d) The concentration of water molecules in the cell is higher than the concentration of water molecules is the surrounding medium.	**[1]**
47	Amoeba acquires its food through **:** a) Exocytosis & Endocytosis b) Exocytosis c) Plasmolysis d) Endocytosis	**[1]**
48	Four strips are cut from a fresh potato. The length of each strip is measured. One strip is placed in water and others in different concentrations of sugar solution. After an hour, the strips were measured again. The results are shown in the table. Which of the liquids P, Q, R and S is water? **Liquid** / **Original length of strip (mm)** / **Final length of strip (mm)** P: 75 / 75 Q: 78 / 80 R: 82 / 80 S: 86 / 85 a) Q b) S c) P d) R	**[1]**

49	An undefined nuclear region of Prokaryotes is known as _____ (a) nucleus (b) nucleoid (c) nucleolus (d) nucleic acid	**[1]**
50	Gaseous exchange in cells takes place by: (a) Exocytosis (b) Diffusion (c) Osmosis (d) Endocytosis	**[1]**
51	Which of the following is the characteristic of displacement of an object? a) Displacement has only magnitude and no specific direction b) The magnitude of the displacement is greater than the distance travelled by a moving object c) Displacement has magnitude as well as specific direction d) Displacement cannot be zero	**[1]**
52	The displacement of the body can be - a) Zero b) All of these c) Positive d) negative	**[1]**
53	A signal from a space ship reaches the ground in 5 minutes. What was the distance of the space ship from the ground station? The speed of the signal is 3×10^{8} m/s. a) 9×10^{7} m b) 9×10^{10} m c) 9×10^{6} m d) 3×10^{6} m	**[1]**
54	A body starting at a point, say A, reaches, say B, ahead in a straight line and returns back to A. Then there is: a) negative displacement b) cannot be said c) zero displacement d) positive displacement	**[1]**
55	The numerical ratio of displacement to distance for a moving object is a) always less than 1 b) equal or less than 1 c) always more than 1 d) always equal to 1	**[1]**
56	A boy runs for 10 minutes at a uniform speed of 9 kmh^{-1} . At what speed should he run for the next 20 minutes so that the average speed becomes 12 kmh^{-1} ? a) 7.72 km h^{-1} b) 10.2 km h^{-1} c) 13.5 km h^{-1} d) 8.2 km h^{-1}	**[1]**
57	A ball is thrown up with a velocity of 20 ms^{-1} .What is the time of flight, neglecting air resistance? a) 8 sec b) 1 sec c) 2 sec d) 4 sec	**[1]**
58	Usha swims in a 90 m long pool. She covers 180 m in one minute going either way. The average velocity is: a) $30ms^{-1}$ b) zero c) $180ms^{-1}$ d) $90ms^{-1}$	**[1]**
59	What is the slope of the body when it moves with uniform velocity? a) positive b) zero c) may be positive or negative d) negative	**[1]**
60	If the velocity of a body is reducing, it is said to have	**[1]**

	a) Retardation b) Both Negative acceleration and Retardation c) Negative acceleration d) Positive acceleration	
61	The longitudinal extent of India is: a) 38^o 8' E to 97 ^{o} 25' E b) 68^o 7' E to 97 ^{o} 25' E c) 68^o 7' E to 77 ^{o} 30' E d) 37^o 8' E to 92 ^{o} 15' E	**[1]**
62	The landmass of India has an area of? a) 3.28 million sq km b) 9.59 million sq km c) 8.54 million sq km d) 7.68 million sq km	**[1]**
63	The Palk Strait is located between: a) India and Maldives b) India and Bangladesh c) India and Sri Lanka d) India and Pakistan	**[1]**
64	Kavarati is situated in a) Diu and Daman b) Andaman and Nicobar island c) Pondicherry d) Lakshwadeep	**[1]**
65	In which one of the following state Tropic of Cancer does not pass through? a) Tripura b) Orissa c) Rajasthan d) Chhattisgarh	**[1]**
66	India is situated in which continent? a) Asia b) Europe c) Africa d) North America	**[1]**
67	The Standard Meridian of India passes through which state? a) Rajasthan b) Maharashtra c) Himachal Pradesh d) Uttar Pradesh	**[1]**
68	If you intend to visit Kavaratti during your summer vacations, which one of the following Union Territories of India you will be going to a) Andaman and Nicobar b) Lakshadweep c) Puducherry d) Diu and Daman	**[1]**
69	Suez canal was open in a) 1969 b) 1849 c) 1850 d) 1869	**[1]**
70	The southernmost point of the Indian Union_____got submerged under the sea water during the Tsunami a) Indira Point b) India Point c) Kanyakumari d) Kavaratti	**[1]**
71	In which of the following year Indira - Point was submerged underwater? a) 2005 b) 2007 c) 2004 d) 2002	**[1]**
72	Which of the following group of islandslies in the Bay of Bengal? a) Sri Lanka b) Lakshwadeep c) Andaman and Nicobar d) Daman and Diu	**[1]**
73	Which one of the following Indian state has the longest coastline on the eastern coast?	**[1]**

	a) Tamil Nadu b) Andhra Pradesh c) Jharkhand d) Orissa	
74	Which is the largest country in the world? a) USA b) Brazil c) India d) Russia	**[1]**
75	Which of the following place of India is located on the three seas? a) Kanyakumari b) Madurai c) Kochi d) Vishakapatnam	**[1]**
76	Before 1947, there were two types of states in India- the provinces and the _____ a)Princely states b)democratic states c) Soverign states d)none of these	**[1]**
77	Which of the following is the east - west extent of India? a) 2910 kms b) 3000 kms c) 3010 kms d) 2933 kms	**[1]**
78	What is the position of India in the world in terms of area? a) Eight b) Seventh c) Fifth d) Sixth	**[1]**
79	Which of the following is the largest state in terms of area? a) Madhya Pradesh b) Uttar Pradesh c) Meghalaya d) Rajasthan	**[1]**
80	The time lag between Gujarat and Arunachal Pradesh is? a) 2 hrs 10 min. b) 2 hrs c) 2 hrs 15 min d) 2 hrs 35 min	**[1]**
81	Which of the following is the total length of the coastline of the Indian mainland including Andaman and Nicobar and Lakshadweep a) 7566.6 km b) 7156.6 km c) 7516.6 km d) 7751.6 km	**[1]**
82	Which one of the following country shares land boundaries with India in the northwest? a) China b) Pakistan c) Nepal d) Bhutan	**[1]**
83	The total length of the coastline of the Indian mainland is a) 9,000 km b) 8,878 km c) 7,516 km d) 6,500 km	**[1]**
84	The latitudinal extent influences a) Change in sea direction b) Duration of day and night c) Change in weather conditions d) Effect the ecosystem	**[1]**
85	India has a land boundary of a) 16,200 km b) 17,500 km c) 15,200 km d) 20,000 km	**[1]**
86	Which one of the following is the Southernmost point of Indian mainland? a) Kavarati b) Indira Point c) Kanyakumari d) Lakshadweep	**[1]**
87	Which of the following state of India share a border with China? a) Orissa b) West Bengal c) Arunachal Pradesh d) Rajasthan	**[1]**
88	The advantage of opening of the Suez canal to India a) Increase in political crisis b) Change in culture c) Influence the people d) India's distance from Europe has been reduced	**[1]**
89	Which one of the following is the Standard Meridian of India? a) 82 degree 30' N b) 82 degree 30' E c) 82 degree 30' W d) 82 degree 30' S	**[1]**
90	Uttarakhand, Uttar Pradesh, Bihar, West Bengal and Sikkim have common frontiers with a) Myanmar b) Bhutan c) China d) Nepal	**[1]**