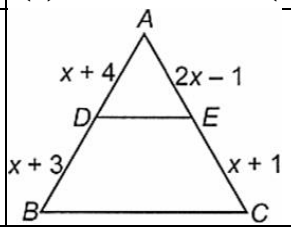
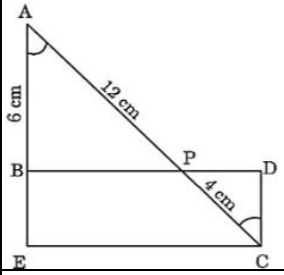
ATOMIC ENERGY CENTRAL SCHOOL NO. 2, MUMBAI

MULTIPLE CHOICE QUESTIONS EXAMINATION – 2(**MCQ-2**)

DATE : 05.08.2025 CLASS : **X** MAX. MARKS: 120

	Section A (Mathematics)
1	In a cyclic quadrilateral ABCD, it is being given that∠ A = (x + y + 10)° ∠ B = (y + 20)°, ∠ C = (x + y - 30)° and ∠ D = (x + y)°. Then, ∠ B = ? a) 100° b) 80° c) 70° d) 110°
2	If the pair of equations 3x - y + 8 = 0 and 6x - r y + 16 = 0 represent coincident lines, then the value of **r** is: a) $-\frac{1}{2}$ b) $\frac{1}{2}$ c) - 2 d) 2
3	If x - y = 2 and$\frac{2}{x+y} = \frac{1}{5}$ then a) x = 6, y = 4 b) x = 4, y = 2 c) x = 5, y = 3 d) x = 7, y = 5
4	When L_1 and L_2 are coincident, then the graphical solution of system of linear equation have a) infinite number of solutions b) no solution c) unique solution d) one solution
5	The ratio of a 2 - digit number to the sum of digits of that number is 4 : 1. If the digit in the units place is 3 more than the digit in the tens place, then what is the number? a) 63 b) 36 c) 24 d) 40
6	Two lines are given to be parallel. The equation of one of these lines is 5x - 3y = 2. The equation of the second line can be: a) - 15x + 9y = 5 b) - 15x - 9y = 5 c) 9x - 15y = 6 d) 15x + 9y = 5
7	The pair of linear equations 4x + 6y = 9 and 2x + 3y = 6 has a) many solutions b) no solution c) two solutions d) one solution
8	Value of x in pair of linear equations 36x + 24y = 702 and 24x + 36y = 558 is __ a) 16 b) $\frac{145}{7}$ c) 17 d) $\frac{33}{2}$
9	The pair of linear equations 2x = 5y + 6 and 15y = 6x - 18 represents two lines which are: a) parallel b) coincident c) intersecting d) either intersecting or parallel
10	If x = - y and y > 0, which of the following is wrong? a) x^2 y > 0 b) $\frac{1}{x} - \frac{1}{y} = 0$ c) xy < 0 d) x + y = 0
11	x^2 - 6ax = - 6a^2 discriminant of the given equation is _____ a) $2a^2$ b) $4a^2$ c) $6a^2$ d) $12a^2$
12	$3x^2$ + 2x - 1 = 0 have a) No Real roots b) Real roots c) real and equal root d) Real and Distinct roots
13	If one root of the equation $2x^2$ + ax + 6 = 0 is 2 then a = ? a) 7 b) $\frac{7}{2}$ c) $\frac{-7}{2}$ d) - 7
14	If the equation $4x^2$ - 3kx + 1 = 0 has equal roots then k = ? a) $\pm\frac{4}{3}$ b) $\pm\frac{1}{3}$ c) $\pm\frac{2}{3}$ d) $\pm\frac{3}{4}$
15	A two - digit number is such that the product of the digits is 20. When 9 is added to the number then the digits interchange their places. The number is a) 54 b) 45 c) 50 d) 55
16	The product of two successive integral multiples of 5 is 1050. Then the numbers are a) 30 and 35 b) 35 and 40 c) 25 and 35 d) 25 and 30
17	Which of the following equations has two distinct real roots? a) $5x^2 - 3x + 1 = 0$ b) $x^2 + x + 5 = 0$ c) $x^2 + x - 5 = 0$ d) $4x^2 - 3x + 1 = 0$

18	A two digit number is such that the product of the digits is 12. When 36 is added to the number then the digits interchange their places. The number is a) 26 b) 43 c) 34 d) 62
19	The quadratic equation $2x^2 - \sqrt{5}x + 1 = 0$ has a) two distinct real roots b) more than 2 real roots c) no real root d) two equal real roots
20	The hypotenuse of a right triangle is 6m more than twice the shortest side. The third side is 2m less than the hypotenuse. The representation of the above situation in the form of a quadratic equation is a) $(2x - 6)^2 = x^2 - (2x - 4)^2$ b) $(2x + 6)^2 = x^2 - (2x + 4)^2$ c) $(2x + 6)^2 + x^2 = (2x + 4)^2$ d) $(2x + 6)^2 = x^2 + (2x + 4)^2$
21	If the sum of the n terms of an A.P is $2n^2 + 5n$,then its nth term is a) n - 4 b) 4n + 3 c) 4n - 3 d) 3n + 4
22	A thief runs away from a police station with a uniform speed of 100 m/minute. After one minute a policeman runs behind the thief to catch him. He goes at speed of 100 m/minute in first minute and increases his speed 10 m each succeeding minute. After how many minutes, the policeman will catch the thief? a) 3 mins b) 5 mins c) 2 mins d) 4 mins
23	The sum of first 16 terms of the AP 10, 6, 2, ... is a) - 400 b) 320 c) - 320 d) 352
24	The common difference of the A.P whose $a_n = -3n + 7$ is a) 3 b) 1 c) 2 d) - 3
25	If S_n denotes the sum of the first n terms of an AP. Then, $S_{3n} : (S_{2n} - S_n)$ is a) 2n b) 3n c) 3 d) n
26	The number of multiples of 4 lie between 10 and 250 is a) 64 b) 62 c) 65 d) 60
27	Which term of the AP 25, 20, 15,... is the first negative term? a) 9^{th} b) 7^{th} c) 10^{th} d) 8th
28	The sum of the first 21 terms of an A.P 16, 12, 8, 4, ... is: a) - 484 b) - 504 c) - 480 d) 1176
29	The sum of the first 10 terms of the A.P. z - 8, z - 2, z + 4,...., is a) 190 + 10z b) 190 - 10z c) 10z - 190 d) 10z + 180
30	Which term of the A.P. - 29, - 26, - 23, ..., 61 is 16? a) 16^{th} b) 10^{th} c) 11^{th} d) 31^{st}
31	The sum of first n terms of an AP is $(3n^2 + 6n)$. The common difference of the AP is a) 6 b) 9 c) 15 d) - 3
32	The sum of first n terms of an AP is $(5n - n^2)$. The nth term of the AP is a) (5 - 2n) b) (6 - 2n) c) (2n - 6) d) (2n - 5)
33	The 2nd term of an AP is 13 and its 5th term is 25. What is its 17th term? a) 81 b) 73 c) 77 d) 69
34	If the numbers n – 2, 4n – 1 and 5n + 2 are in AP, the value of n a)2 b) 1 c) 3 d) 5
35	In an AP if a = 1, an = 20 and Sn = 399, then n is (a) 19 (b) 21 (c) 38 (d) 42
36	 In the given figure, DE || BC. Find the value of X. a) $\sqrt{3}$ b) $\sqrt{5}$ c) $\sqrt{7}$ d) $\sqrt{6}$

37	XY is drawn parallel to the base BC of a△ ABC cutting AB at X and AC at Y. If AB = 4 BX and YC = 2cm, then AY = a) 4 cm b) 8 cm c) 2 cm d) 6 cm
38	D and E are respectively the points on the sides AB and AC of a triangle ABC such that AD = 3 cm, BD = 5 cm, BC =12.8 cm and DE || BC. Then length of DE (in cm) is a) 7.6 cm b) 2.5 cm c) 19.2 cm d) 4.8 cm
39	 In the given figure,∠ A = ∠ C, AB = 6 cm, AP = 12 cm, CP = 4 cm. Then length of CD is: a) 8 cm b) 6 cm c) 18 cm d) 2 cm
40	In△ ABC, D and E are points on side AB and AC respectively such that DE || BC and AD : DB = 3 : 1. If EA = 3.3 cm, then AC = a) 5.5 cm b) 4.4 cm c) 4 cm d) 1.1 cm
	Section – B (Science)
41	The image formed by a concave mirror of focal length 50 cm is real and of magnification – 1. In this case the distance between the object from its own image is (A) 50 cm (B) 100 cm (C) 200 cm (D) zero
42	If a lens can converge the sun rays at a point 20 cm away from its optical centre , the power of this lens is (A) +2 D (B) – 2 D (C) +5 D (D) – 5 D
43	The speed of light in vacuum is $3x10^8$m/s. If the speed of light in a medium is 2.25 x 10^8m/s, the absolute refractive index of the medium is (A) 7/6 (B) 5/4 (C) 4/3 (D) 3/2
44	An object was placed at the centre of curvature of a concave lens. The image formed by the lens would be (A) virtual, erect and same size as the object (B) virtual, erect and smaller than the object (C) real, inverted and larger than the object (D) real, inverted and same size as the object
45	For a convex mirror the image distance(v) = 5 cm. focal length (f) = 10 cm and height of the image (h) = 7.5 cm. The correct representation according to sign convention is (A) v = – 5 cm , f = – 10 cm , h = – 7.5 cm (B) v = – 5 cm ,f = +10 cm , h = –7.5 cm (C) v = + 5 cm , f = – 10 cm , h = +7.5 cm (D) v = + 5 cm , f = +10 cm , h = + 7.5 cm
46	An object of height 10 cm is placed in front of a convex lens having focal length of 12 cm. The object is placed at a distance of 36 cm in front of the lens. How many times is the image likely to be magnified? (A) ½ times (B) 3 times (C) 4 times (D) 2 times
47	_____ of the human eye controls the amount of light entering into it (A) Iris (B) cornea (C) ciliary muscles (D) pupil
48	The lens system of human eye forms an image on a light sensitive screen called (A) cornea (B) ciliary muscles (C) optic nerves (D) Retina
49	A person cannot see objects distinctly kept beyond 2m. This defect can be corrected by using a lens of power (A) + 0.5 D (B) – 0.5 D (C) + 0.2 D (D) – 0.2 D
50	The phenomenon of light involved in the formation of a rainbow in the sky are

	(A) refraction , dispersion , reflection (B) refraction, dispersion,total internal reflection (C) dispersion , scattering, reflection (D) dispersion , refraction, internal reflection
51	The clear sky appears blue because (A) blue light gets absorbed in the atmosphere (B) ultraviolet radiations are absorbed in the atmosphere (C) violet& blue lights get scattered more than lights of all other colors by atmosphere (D) light of all other colors is scattered more than violet & blue color by atmosphere
52	The focal length of the eye lens increases when eye muscles (A) are relaxed and lens becomes thinner (B) contract and lens becomes thicker (C) are relaxed and lens becomes thicker (D) contract and lens becomes thinner
53	The danger signals installed at the top of tall buildings are red in colour. These can be easily seen from a distance because among all other colours, the red light (A) is scattered the most by smoke or fog (B) is scattered the least by smoke or fog (C) is absorbed the most by smoke or fog (D) moves fastest in air
54	$Na_2CO_3.10H_2O$ is known as – (A) Baking soda (B) Baking powder (C) Washing soda (D) Bleaching powder
55	Which of the following are present in a dilute Aqueous solution of hydrochloric acid? (A) H_3O^+ , Cl^- (B) H_3O^+ ,OH^-+ (C) Cl^- ,OH^- (D) Unionised HCl
56	At what temperature is gypsum heated to form Plaster of Paris? (A) 35°C (B) 70°C (C) 80°C (D) 100°C
57	Due to excess passing of CO_2 through an aqueous solution of slaked lime, its milkiness fades because A. Calcium carbonate is produced B. Calcium bi-carbonate is produced C. Calcium oxide is produced D. Due to the production of more heat
58	Phenolphthalein's colour in basic medium is ____but in acid it is _____. A. Pink, Colourless B. Yellow, Pink C. Pink, Orange D. Blue, Red
59	What is formed when zinc reacts with sodium hydroxide? A. Zinc hydroxide and sodium B. Sodium zincate and hydrogen gas C. Sodium zinc-oxide and hydrogen gas D. Sodium zincate and water
60	The following phenomena occur, when a small amount of acid is added to water A. ionization B. Neutralization C. Precipitation D. Salt formation
61	Bleaching powder gives smell of chlorine because it A. is unstable B. gives chlorine on exposure to atmosphere C. is a mixture of chlorine and slaked lime D. contains excess of chlorine
62	Which of the following salts does not contain water of crystallisation? A. Blue vitriol B. Baking soda C. Washing soda D. Gypsum
63	If a few drops of a concentrated acid accidentally spills over the hand of a student, what should be done? A. Wash the hand with saline solution. B. Wash the hand immediately with plenty of water and apply a paste of sodium hydrogen carbonate. C. After washing with plenty of water, apply solution of sodium hydroxide on the hand. D. Neutralise the acid with a strong alkali
64	Which of the following is a basic salt? A)Sodium chloride B) Sodium carbonate C)Ammonium chloride D)Copper sulphate

65	Why does dry hcl gas not change the colour of the dry litmus paper? A. Blue litmus becomes dry in the presence of dry HCl B. No ions will be present litmus changes colour only in the presence of $H3O^+$ ions C. HCL gas acts as a dehydrating agent D. None of the above
66	A calcium compound reacts with dilute hydrochloric acid to produce effervescence. The gas evolved extinguishes a burning candle. Identify the compound formed and the gas evolved. A. Calcium carbonate carbon dioxide B. Calcium Chloride ,Carbon dioxide B. Calcium Oxide , Hydrogen C. Calcium Carbonate, Hydrogen
67	As compared to daytime, the amount of carbon dioxide released by the plants during night is more because: A. Plants do not respire during daytime. B. It is not produced during daytime. C. It is stored in the leaves of plants during daytime. D. Major amount of carbon dioxide produced is used up for photosynthesis during daytime.
68	Choose the forms in which most plants absorb nitrogen i. Proteins ii. Nitrates and Nitrites iii. Urea iv. Atmospheric nitrogen A. (i) and (ii) B. (i) and (iv) C. (iii) and (iv) D. (ii) and (iii)
69	While preparing a temporary stained mount of a leaf epidermal peel, the extra stain is removed by A. washing with water B. washing with calcium chloride solution C. soaking with filter paper D. absorbing with cotton wool
70	The neurons that carry nerve impulse from spinal cord to effectors are called A.Sensory neurons B. Motor neurons C. Interneurons D.Spinal neurons
71	Electrical impulse travels in a neuron from: A. Dendrite → Axon → axon end → cell body B. Cell body → dendrite → axon → axon end C. Dendrite → cell body → axon → axon end D. Axon end → axon → cell body → dendrite
72	In a neuron the conversion of electric signal to a chemical signal occurs: A. Dendrite end B. cell body C. axon end D. Myelin sheath
73	The olfactory receptors in humans are located in A. Eyes B. Tongue C.Ears D.Nose
74	the contraction of pupil of the eye in response to bright light is an example of A. Voluntary reflex B.Spinal reflex C.cerebral reflex D.Adrenal reflex
75	Which of the following statements is correct about receptors? A. Gustatory receptors detect taste while olfactory receptors detect smell B. Both gustatory and olfactory receptors detect smell C. Auditory receptors detect smell and olfactory receptors detect taste D. Olfactory receptors detect taste and gustatory receptors smell
76	Input and output nerves meet at A. Liver B. CNS C.muscles D.heart
77	Any change in the environment to which an organism responds is called A. stimulus B. coordination C. response D. hormone
78	Assertion: Impulse travels from dendrite to cell body and then along the axon to its end. Reason: Information acquired at the end of the dendrite tip of a nerve cell sets of an electric impulse.

	A.Both A and R are true and R is the correct explanation of A. B. Both A and R are true but R is not the correct explanation of A. C. A is true but R is false. D. A is false but R is true. E.Both A and R are false
79	Name the substances whose build up in the muscles during vigorous physical exercise may cause cramps? A. Ethanol + Carbon dioxide + Energy B. Lactic acid + Energy C. Carbon dioxide + Water + Energy .D. Pyruvate
80	Which of the following are chiefly digested in the stomach? A. Carbohydrates B. Proteins C Lipids D. Fats
	Section C (Social Science)
81	It is the decision - making body for the entire village: a) State government b) Gram panchayat c) Mayor d) Zilla parishad
82	Rural local government is popularly known by the name of: a) block level b) state level c) national level d) panchayati raj
83	How many languages are accepted in the Indian constitution? a) 21 b) 20 c) 28 d) 22
84	A government formed by the coming together of at least two political parties refers to: a) opposition government b) federation government c) coalition government d) cooperative government
85	Which of the following is a subject of the Union List? a) Agriculture b) Defence c) Education d) Trade
86	Which of the following is a subject of the State List? a) Banking b) Commerce c) Foreign Affairs d) Currency
87	_____ is the political head of the municipality. a) Sarpanch b) Municipal chairperson c) Panch d) District Collector
88	Which amongthe following are the three lists in Constitution? a) Concurrent List b) State List c) Union List d)All of these
89	Which one of the following is a private sector industry? a) TISCO b) OIL c) SAIL d) BHEL
90	Which one of the following is an example of organized sector activities? a) A teacher taking classes in a government school. b) A handloom weaver working in her house. c) A headload worker carrying cement. d) A farmer irrigating his field.
91	Which of the given activity is not from the secondary sector? a) Construction b) Making our from sugarcane c) Animal husbandry d) Cloth weaving
92	**A** is a worker in a garment export industry of Jaipur. He gets facilities like health insurance, provident fund, medical leave, etc. In which one of the following sectors is **A** working? a) Primary sector b) Non - Governmental sector c) Unorganized sector d) Organized sector
93	Which of these is a feature of the organised sector? a) Fixed no of working hours b) No provision for paid leave c) Jobs are low paid and often not regular d) Job insecurity

94	<table><tr><th>(Sector of the Economy)</th><th>(Example)</th></tr><tr><td>(A) Primary Sector</td><td>Tailor</td></tr><tr><td>(B)Secondary Sector</td><td>Fisherman</td></tr><tr><td>(C) Tertiary Sector</td><td>Astronaut</td></tr><tr><td>(D) Primary Sector</td><td>Courier</td></tr></table>	Which one of the following pairs is correctly matched? a) Pair (B) is correct. b) Pair (D) is correct. c) Pair (A) is correct. d) Pair (C) is correct.
95	How can we increase employment in a semi - rural area? a) Setting up a university b) Setting up hospitals c) Setting up an IT company d) Setting up a dal mill	
96	Which of the following Acts would not apply on an enterprise under organised sector? a) National Rural Employment Guarantee Act b) Payment of Gratuity Act c) Factories Act d) Minimum Wages Act	
97	A form of demonstration or protest by which people block the entrance to a shop, factory, or office is referred to as: a) picket b) riots c) parade d) target	
98	One important feature of the Civil Disobedience Movement was: a) Gandhiji's belief that women should not join it and remain at home b) The large - scale participation of the Dalits or Harijans c) The complete change in the status of women in society d) Large - scale participation of women	
99	What did the Rowlatt Act, 1919 presume? a) Forced manual labour b) Forced recruitment in the army c) Detention of political prisoners without trial d) Equal pay for equal work	
100	Whocomposed the song Vande Mataram? a) Bankim Chandra Chattopadhyay b) Natesa Sastri c) Sarat Chandra Chatterjee d) Rabindranath Tagore	
101	Choose the correct option, related to the founders of the **Swaraj Party** within the Congress. a) Acharya Kripalani and Jayaprakash Narayan b) Mahatma Gandhi and Sardar Patel c) C.R. Das and Motilal Nehru d) Subhas Chandra Bose and Jawaharlal Nehru	
102	Who led the peasants' movement in Oudh during the Non - Cooperation Movement? a) Mahatma Gandhi b) Jawahar lal Nehru c) Sardar Patel d) Baba Ramchandra	
103	Which one of the following provisions is related to Gandhi - Irwin Pact? a) To arrest Sir John Simon b) Not to arrest Gandhiji c) To release the political prisoners d) To abolish Salt Act	
104	Which of the following was a cause for the withdrawal of the Non - Cooperation Movement? a) Lack of coordination among the satyagrahi b) Gandhiji wanted to start Civil Disobedience c) An outbreak of violence at Chauri Chaura d) Other nationalists persuaded Gandhiji	
105	The tribals' chanting Gandhiji's name and raising slogans demanding 'Swatantra Bharat'as: a) They were going beyond their own locality and emotionally identifying with an all - India movement b) The various ways in which 'Swaraj' was interpreted by different people c) They were a unifying force of the Non - Cooperation Movement d) It showed the greatness of Mahatma Gandhi	
106	The business groups and industrialists lost enthusiasm for the Civil Disobedience Movement because: a) They lost faith in Gandhiji's methods b) They were worried about their self - esteem	

	c) They were worriedabout prolonged disruption of business d) They were frightened by the British repression
107	What is JFM? a) Joint Forest Management b) Joint Forest Means. c) Judicial Forest Management d) Junior Forest Manager
108	Which of the following are regarded as the most valuable forest? a) Open forest b) Reserved forest c) Protected forest d) Unclassed forest
109	Where is the BuxaTiger Reserve located? a) Maharashtra b) Punjab c) West Bengal d) Madhya Pradesh
110	Simlipal is located in the state of: a) Jarkhand b) W. Bengal c) Orissa d) Bihar
111	What is the Narmada Sagar project of Madhya Pradesh related to? a) Protecting forests b) Plantation project c) Save river water d) Clearingof forests
112	Which communities worship the Mahua and Kadamba trees during weddings? a) Kumao b) Santhals c) Both Mundas and Santhals d) Mundas
113	When was the Wildlife Protection Act implemented? a) 1978 b) 1985 c) 1980 d) 1972
114	In arid and semi - arid regions, agricultural fields were converted into rain - fed storage structures that allowed the water to stand and moisten the soil like the a) inundation channels b) ‘guls’ or ‘kuls’ c) ‘khadins’ and ‘Johads’ d) lakes
115	By which year nearly two billion people will live in absolute water scarcity? a) 2020 b) 2025 c) 2040 d) 2030
116	Today, in western Rajasthan, sadly the practice of rooftop rainwater harvesting is on the decline as plenty of water is available due a) to the perennial Rajasthan Canal b) rivers c) to the tap connections d) dams construction
117	It is a 200 - year - old system of tapping stream and spring water by using bamboo pipes in Meghalaya. a) bamboo drip irrigation system b) under ground water storage system c) roof top rain water harvesting d) rain water harvesting system
118	_____ of the earth’s surface is covered with water. a) Two fourth b) One third c) One fourth d) Three fourth
119	Which one of the following is the irrigation system in Meghalaya? a) To remove water from soil. b) To irrigate land only during rainy season. c) To use bamboo drip irrigation system. d) To use large volumes of water for irrigation.
120	Which one of the following statements is not an argument in favour of multipurpose river projects? a) Multi - purpose projects by regulating water flow helps to control floods b) Multi - purpose projects bring water to those areas which suffer from water scarcity c) Multi - purpose projects lead to large scale displacements and loss of livelihood d) Multi - purpose projects generate electricity for our industries and our homes