

**MODEL QUESTION PAPER OF  
APGET SCHOLARSHIP 2025-26  
(FOR CBSE/STATE SYLLABUS)**

**SUBJECT  
SCIENCE &  
MATHEMATICS**

- The image formed by a concave mirror is observed to be virtual, erect and larger than the object. Where should be the position of the object?  
(a) Between the principal focus and the centre of curvature  
(b) At the centre of curvature  
(c) Beyond the centre of curvature  
(d) Between the pole of the mirror and its principal focus.
- Where an object should be placed in front of a convex lens to get a real image of the size of the object?  
(a) At the principal focus of the lens (b) At twice the focal length  
(c) At infinity (d) Between the optical centre of the lens and its principal focus.
- A spherical mirror and a thin spherical lens have each a focal length of  $-15$  cm. The mirror and the lens are likely to be  
(a) both concave. (b) both convex.  
(c) the mirror is concave and the lens is convex.  
(d) the mirror is convex, but the lens is concave.
- No matter how far you stand from a mirror, your image appears erect. The mirror is likely to be  
(a) only plane. (b) Only concave.  
(c) Only convex. (d) Either plane or convex.
- Which of the following lenses would you prefer to use while reading small letters found in a dictionary?  
(a) A convex lens of focal length 50 cm. (b) A concave lens of focal length 50 cm.  
(c) A convex lens of focal length 5 cm. (d) A concave lens of focal length 5 cm.
- The human eye can focus on objects at different distances by adjusting the focal length of the eye lens. This is due to  
(a) presbyopia. (b) accommodation. (c) near-sightedness. (d) far-sightedness.
- The change in focal length of an eye lens is caused by the action of the  
(a) pupil. (b) retina. (c) ciliary muscles. (d) iris.
- A piece of wire of resistance  $R$  is cut into five equal parts. These parts are then connected in parallel. If the equivalent resistance of this combination is  $R'$ , then the ratio  $R/R'$  is -  
(a)  $1/25$  (b)  $1/5$  (c) 5 (d) 25
- An electric bulb is rated 220 V and 100 W. When it is operated on 110 V, the power consumed will be  
(a) 100 W (b) 75 W (c) 50 W (d) 25 W
- Two conducting wires of the same material and of equal lengths and equal diameters are first connected in series and then parallel in a circuit across the same potential difference. The ratio of heat produced in series and parallel combinations would be -  
(a) 1:2 (b) 2:1 (c) 1:4 (d) 4:1
- An electric bulb is connected to a 220 V generator. The current is 0.50 A. What is the power of the bulb?  
(a) 110W (b) 200W (c) 40W (d) 80W

12. An electric refrigerator rated 400 W operates 8 hour/day. What is the cost of the energy to operate it for 30 days at Rs 3.00 per kW h?  
 (a) 150 (b) 288 (c) 350 (d) 100
13. Which of the following correctly describes the magnetic field near a long straight wire?  
 (a) The field consists of straight lines perpendicular to the wire.  
 (b) The field consists of straight lines parallel to the wire.  
 (c) The field consists of radial lines originating from the wire.  
 (d) The field consists of concentric circles centred on the wire.
14. The phenomenon of electromagnetic induction is  
 (a) the process of charging a body.  
 (b) the process of generating magnetic field due to a current passing through a coil.  
 (c) producing induced current in a coil due to relative motion between a magnet and the coil.  
 (d) the process of rotating a coil of an electric motor.
15. Most of the sources of energy we use represent stored solar energy. Which of the following is not ultimately derived from the Sun's energy?  
 (a) geothermal energy (b) wind energy  
 (c) nuclear energy (d) bio-mass.
16. Baking powder contains sodium hydrogen carbonate and  
 (a) Tartaric acid (b) Sulphuric acid (c) Hydrochloric acid (d) Acetic acid
17. The solution with the lowest concentration of  $H^+$  ion is  
 (a) pH=7 (b) pH=8.6 (c) pH=2.0 (d) pH=6.8
18. Plaster of Paris is obtained  
 (a) By heating water to calcium sulphate (b) By heating sulphuric acid to calcium hydroxide  
 (c) By heating gypsum to a very high temperature (d) By heating gypsum to a 100 °C
19. When lead nitrate reacts with potassium iodide, yellow precipitate of  
 (a)  $PbI_2$  is formed (b)  $KNO_3$  is formed (c)  $Pb(NO_3)_2$  is formed (d)  $PbIO_3$  is formed
20. In an endothermic reaction  
 (a) Heat is absorbed (b) Heat is liberated  
 (c) Heat is neither liberated nor absorbed (d) both (a) and (b)
21.  $AgNO_3(aq) + NaCl(aq) \rightarrow AgCl(s) + NaNO_3(aq)$ . The above reaction is  
 (a) Precipitation reaction (b) Double displacement reaction  
 (c) Combination reaction (d) both (a) and (b)
22.  $X HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + Y H_2O$   
 X and Y in the above equation respectively  
 (a) 2, 3 (b) 3, 2 (c) 2, 2 (d) 1, 1
23. Complete the reaction  $Zn + 2NaOH \rightarrow$   
 a)  $Zn(OH)_2 + H_2$  (b)  $Na_2ZnO_2 + H_2$   
 (c)  $Zn(OH)_2 + Na_2O$  (d)  $Na_2ZnO_2 + Na_2O$
24. Which of the following metal cannot be refined by electrolytic refining?  
 (a) Cu (b) Ag (c) Ni (d) Na
25. All the members of homologous series of alkynes have the general formula  
 (a)  $C_nH_{2n}$  (b)  $C_nH_{2n+2}$  (c)  $C_nH_{2n-2}$  (d)  $C_nH_{2n-4}$
26.  $C_2H_4$  reacts with hydrogen in presence of Ni gives  
 (a)  $CH_4$  (b)  $C_2H_6$  (c)  $HCOOH$  (d)  $HCHO$
27. The IUPAC name of the compound  $CH_2 = C(CH_3)_2$  is  
 (a) 1, 1 dimethylprop-2-ene (b) 2-methylprop-1-ene  
 (c) 2-ethyl-3, 3-dimethylbutane (d) 2, 3-dimethylhexane
28. A redox reaction is the one in which  
 (a) Both the substances are reduced (b) Both the substances are oxidised  
 (c) An acid is neutralised by the base  
 (d) One substance is oxidised while the other is reduced

29. Which gas is evolved when acids react with metal carbonates?  
 (a)  $CO_2$  (b)  $H_2$  (c)  $NH_3$  (d)  $O_2$
30. The metal that reacts with cold water  
 (a) Aluminium (b) zinc (c) sodium (d) iron
31. Which of the following structure is the site for complete digestion of carbohydrates, proteins and fats?  
 (a) Mouth (b) Stomach (c) Small Intestine (d) Large Intestine
32. Identify the incorrect statement from the following  
 (a)  $CO_2$  is less soluble than  $O_2$  in water.  
 (b) Haemoglobin is present in red blood cells.  
 (c) In humans,  $O_2$  is carried by red blood cells.  
 (d) Rings of cartilage are present in throat.
33. The main thinking part of the brain is  
 (a) Forebrain (b) Hindbrain (c) Midbrain (d) All of these
34. Match the column I with column II and choose the most appropriate option

	Column I		Column II
1	Growth hormone	A	Ovary
2	Adrenaline	B	Testes
3	Estrogen	C	Adrenal
4	Testosterone	D	Pituitary gland

- (a) 1-D, 2-C, 3-A, 4-B (b) 1-D, 2-C, 3-B, 4-A (c) 1-B, 2-C, 3-D, 4-A (d) 1-A, 2-C, 3-D, 4-B
35. The disease Kala-Azar is caused by  
 (a) Leishmania (b) Amoeba (c) Euglena (d) Paramecium
36. Identify the incorrect match from the following with respect to mode of reproduction in organisms  
 (a) Amoeba- Binary fission (b) Leishmania- Regeneration  
 (c) Hydra- Regeneration (d) Bacteria- Cell division
37. Spore formation is a mode of reproduction in which of the following organism?  
 (a) Bryophyllum (b) Rhizopus (c) Amoeba (d) Planaria
38. The number of chromosomes present in humans is  
 (a) 21 pairs (b) 22 pairs (c) 23 pairs (d) 24 pairs
39. In peas, a pure tall plant in homozygous condition is crossed with a pure dwarf plant in homozygous condition. The ratio of pure tall plants to pure dwarf plants in the F<sub>2</sub> generation is  
 (a) 1:1 (b) 1:2 (c) 1:3 (d) 1:4
40. Humans have two different sex chromosomes such as X and Y. Which of the following statement about these two chromosomes is correct?  
 (a) Offspring will inherit chromosomes from only one parent  
 (b) Male offspring will inherit both X and Y chromosomes from father only  
 (c) Female offspring will inherit both X chromosomes from mother only  
 (d) Male offspring will inherit X chromosome from mother and Y chromosome from father
41. According to Darwin, evolution takes place due to  
 (a) Mutation (b) Natural selection (c) Inheritance (d) Variation
42. According to Haldane the origin of life is from  
 (a) Simple organic molecules (b) Simple inorganic molecules  
 (c) Pre-existing life (d) All of these
43. Evolution of wild cabbage is termed as  
 (a) Artificial selection (b) Natural selection (c) Mutation (d) Genetic drift
44. The modern day humans have their ancestors lived in  
 (a) Australia (b) Asia (c) Africa (d) China
45. Which of the following statement describes the function of decomposers?  
 (a) Conversion of organic material into inorganic material  
 (b) Conversion of inorganic material into organic material

- (c) Breakdown of inorganic material very simple material  
 (d) All of these
46. What is the percentage of solar energy captured by green plants present in the terrestrial ecosystem?  
 (a) 1% (b) 2% (c) 3% (d) 4%
47. The full form of UNEP is  
 (a) United nations environment programme (b) Union of nations environment programme  
 (c) United nations ecosystem programme (d) Union of nations ecosystem programme
48. 'Kulhs' is the ancient water harvesting structure were made in  
 (a) Manipur (b) Bihar (c) Himachal Pradesh (d) Uttar Pradesh
49. Amrita Devi Bishnoi sacrificed her life to protect the  
 (a) Palm trees (b) Khejri trees (c) Sal trees (d) Teakwood trees
50. The Tehri dam is constructed on River  
 (a) Yamuna (b) Bhagirathi (c) Ravi (d) Sutlej
51. 140 can be expressed as a product of the prime factors as  
 a)  $2^3 \times 5 \times 7$  b)  $2^2 \times 5 \times 7$  c)  $2^3 \times 3 \times 7$  d)  $2^2 \times 3 \times 7$
52. If  $(-1)^n + (-1)^{4n} = 0$ , then  $n$  is  
 a) Any positive integer c) Any odd natural number  
 b) Any negative integer d) Any even natural number
53. The number  $3^{13} - 3^{10}$  is divisible by  
 a) 2 and 3 only b) 3 and 10 only c) 2, 3 and 10 only d) 2, 3 and 13
54. The *H. C. F* of 280 and 674 is  
 a) 2 b) 4 c) 14 d) 28
55. If *H. C. F* ( $a, b$ ) = 12 and  $a \times b = 1800$ , then *L. C. M* ( $a, b$ ) =  
 a) 3600 b) 900 c) 150 d) 90
56. Which of the following is not a polynomial?  
 a)  $\sqrt{3}x^2 - 2\sqrt{3}x + 3$  c)  $x + \frac{1}{x}$   
 b)  $\frac{3}{2}x^3 - 5x^2 - \frac{1}{\sqrt{2}}x - 1$  d)  $5x^2 - 3x + \sqrt{2}$
57. If  $p(y) = 3y^4 - 5y^3 + y^2 + 8$ , then  $p(-1)$  will be  
 a) 2 b) 15 c) 17 d) -17
58. Degree of polynomial  $y^3 - 2y^2 - \sqrt{3}y + \frac{1}{2}$  is  
 a)  $\frac{1}{2}$  b) 2 c) 3 d) 4
59. The sum and product of the zeroes of a quadratic polynomial are 2 and -15 respectively. The quadratic polynomial is  
 a)  $x^2 - 2x + 15$  b)  $x^2 - 2x - 15$  c)  $x^2 + 2x - 15$  d)  $x^2 + 2x + 15$
60. If the sum of the zeroes of the quadratic polynomial  $f(t) = kt^2 + 2t + 3k$  is equal to their product, then the value of  $k$  is  
 a)  $-\frac{2}{3}$  b)  $\frac{2}{3}$  c)  $\frac{1}{3}$  d)  $-\frac{1}{3}$
61. If the pair of linear equations  $x - y = 1, x + ky = 5$  has unique solution  $x = 2, y = 1$ , then the value of  $k$  is  
 a) -2 b) 3 c) 2 d) 4
62. The pair of linear equations  $2kx + 5y = 7, 6x - 5y = 11$  has a unique solution if  
 a)  $k \neq -3$  b)  $k \neq 6$  c)  $k \neq 5$  d)  $k \neq -5$
63. The pair of linear equations  $2x + 5y = k$  and  $kx + 15y = 18$  has infinitely many solutions if  
 a)  $k = 3$  b)  $k = 6$  c)  $k = 9$  d)  $k = 18$
64. The pair of linear equations  $x + 2y = 5$  and  $3x + 12y = 10$  has  
 a) Unique solution c) More than two solutions  
 b) No solution d) Infinitely many solutions
65. Which of the following is the solution of the pair of equations  $3x - 2y = 4$  and  $6x - 4y = 8$ ?  
 a)  $x = 2, y = 1$  b)  $x = 4, y = 4$  c)  $x = 6, y = 7$  d) All of these

66. Solutions of the quadratic equation  $6x^2 + 7x - 10 = 0$  are  
 a)  $\frac{5}{6}, -2$                       b)  $\frac{6}{5}, 2$                       c)  $\frac{5}{6}, 2$                       d)  $-\frac{5}{6}, -2$
67. If  $x = k$  be a solution of the quadratic equation  $x^2 + 4x + 3 = 0$ , then  $k = -1$  and  
 a) 2                      b) -3                      c) 3                      d) -2
68. The positive real root of the equation  $64x^2 - 1 = 0$  is  
 a) 8                      b)  $\frac{1}{16}$                       c)  $\frac{1}{8}$                       d)  $\frac{1}{4}$
69. The discriminant of the quadratic equation  $3x^2 - 4x - 2 = 0$   
 a) 40                      b) 20                      c) 24                      d) 48
70. If the equation  $x^2 + 4x - k = 0$  has real and distinct roots, then  
 a)  $k < -4$                       b)  $k > -4$                       c)  $k \leq -4$                       d)  $k \geq -4$
71. In an arithmetic progression if  $a = 10$  and  $d = 10$ , then first four terms will be:  
 a) 10, 30, 50, 60                      b) 10, 20, 30, 40                      c) 10, 15, 20, 25                      d) 10, 18, 20, 30
72. The first term and common difference for the A.P. 3, 1, -1, -3 is  
 a) 1 and 3                      b) -1 and 3                      c) 3 and -2                      d) 2 and 3
73. The missing terms in AP: \_\_, 13, \_\_, 3 are:  
 a) 11 and 9                      b) 17 and 9                      c) 18 and 8                      d) 18 and 9
74. The 21st term of AP whose first two terms are -3 and 4 is:  
 a) 17                      b) 137                      c) 143                      d) -143
75. The 10th term of the AP: 5, 8, 11, 14, ... is  
 a) 32                      b) 35                      c) 38                      d) 185
76. If perimeter of a triangle is 100 cm and the length of two sides are 30 cm and 40 cm, the length of third side will be:  
 a) 30 cm                      b) 40 cm                      c) 50 cm                      d) 60 cm
77. The height of an equilateral triangle of side 5 cm is:  
 a) 4.33 cm                      b) 3.9 cm                      c) 5 cm                      d) 4 cm
78. Sides of two similar triangles are in the ratio 4: 9. Areas of these triangles are in the ratio  
 a) 2: 3                      b) 4: 9                      c) 81: 16                      d) 16: 81
79. If the distance between the points  $A(2, -2)$  and  $B(-1, x)$  is equal to 5, then the value of  $x$  is:  
 a) 2                      b) -2                      c) 1                      d) -1
80. The midpoint of a line segment joining two points  $A(2, 4)$  and  $B(-2, -4)$  is  
 a) (-2, 4)                      b) (2, -4)                      c) (0, 0)                      d) (-2, -4)
81. The distance of point  $A(2, 4)$  from the x-axis is  
 a) 2 units                      b) 4 units                      c) -2 units                      d) -4 units
82. In  $\Delta ABC$ , right-angled at B,  $AB = 24$  cm,  $BC = 7$  cm. The value of  $\tan C$  is:  
 a)  $12/7$                       b)  $24/7$                       c)  $20/7$                       d)  $7/24$
83.  $(\sin 30^\circ + \cos 60^\circ) - (\sin 60^\circ + \cos 30^\circ)$  is equal to:  
 a) 0                      b)  $1 + 2\sqrt{3}$                       c)  $1 - \sqrt{3}$                       d)  $1 + \sqrt{3}$
84. If  $\cos x = \frac{2}{3}$  then  $\tan x$  is equal to:  
 a)  $5/2$                       b)  $\sqrt{5/2}$                       c)  $\sqrt{5}/2$                       d)  $2/\sqrt{5}$

85.  $\frac{2 \tan 30^\circ}{1 + \tan^2 30^\circ} =$   
 a)  $\sin 60^\circ$                       b)  $\cos 60^\circ$                       c)  $\tan 60^\circ$                       d)  $\sin 30^\circ$
86. The value of  $(\sin 45^\circ + \cos 45^\circ)$  is  
 a)  $1/\sqrt{2}$                       b)  $\sqrt{2}$                       c)  $\sqrt{3}/2$                       d) 1
87. If the height of the building and distance from the building foot's to a point is increased by 20%, then the angle of elevation on the top of the building:  
 a) Increases                      b) Decreases                      c) Do not change                      d) None of the above
88. From a point on the ground, which is 15 m away from the foot of the tower, the angle of elevation of the top of the tower is found to be  $60^\circ$ . The height of the tower (in m) standing straight is:  
 a)  $15\sqrt{3}$                       b)  $10\sqrt{3}$                       c)  $12\sqrt{3}$                       d)  $20\sqrt{3}$
89. A tangent intersects the circle at:  
 a) One point                      b) Two distinct point                      c) At the circle                      d) None
90. If the angle between two radii of a circle is  $110^\circ$ , then the angle between the tangents at the ends of the radii is:  
 a)  $90^\circ$                       b)  $50^\circ$                       c)  $70^\circ$                       d)  $40^\circ$
91. Area of the circle with radius 5cm is equal to:  
 a) 60 sq.cm                      b) 75.5 sq.cm                      c) 78.5 sq.cm                      d) 10.5 sq.cm
92. The area of the circle that can be inscribed in a square of side 8 cm is  
 a)  $36\pi \text{ cm}^2$                       b)  $16\pi \text{ cm}^2$                       c)  $12\pi \text{ cm}^2$                       d)  $9\pi \text{ cm}^2$
93. The volume of a cube is  $2744\text{cm}^3$ . Its surface area is  
 a)  $196\text{cm}^2$                       b)  $1176\text{cm}^2$                       c)  $784\text{cm}^2$                       d)  $588\text{cm}^2$
94. The ratio of the total surface area to the lateral surface area of a cylinder with base radius 80cm and height 20cm is  
 a) 1:2                      b) 2:1                      c) 3:1                      d) 5:1
95. The number of spherical balls each of radius 1cm, that can be made from a solid sphere of lead of radius 8cm is  
 a) 60                      b) 512                      c) 4096                      d) 8
96. If we join two hemispheres of same radius along their bases, then we get a  
 a) Cone                      b) Cylinder                      c) Sphere                      d) Cuboid
97. If  $r$  is the radius of the sphere, then the surface area of the sphere is given by;  
 a)  $4\pi r^2$                       b)  $2\pi r^2$                       c)  $\pi r^2$                       d)  $\frac{4}{3}\pi r^2$
98. The mean, mode and median of the observations, 7,7,5,7 and  $x$  are the same. Then the observation  $x$  is  
 a) 10                      b) 9                      c) 8                      d) 7
99. The sum of probabilities of all the elementary events of an experiment is  
 a) 0                      b) 1                      c) -1                      d) None of these
100. The probability that cannot exist among the following:  
 a)  $\frac{2}{3}$                       b) -1.5                      c) 15%                      d) 0.7