

25. The triangle  $\Delta'$  is formed by joining the mid-points of sides of a triangle  $\Delta$ . The ratio of areas of  $\Delta$  and  $\Delta'$  is:  
 a. 6:1      b. 4:1      c. 5:1      d. 2:1
26. From a set of 17 cards numbered 1, 2... 17, one card is drawn at random. What is the probability that the card is a multiple of 3 or 7?  
 a. 6/17      b. 7/17      c. 10/49      d. 12/17
27. Between two book ends in your study are displayed your five favorite puzzle books. If you decide to arrange the five books in every possible combination and moved just one book every minute, how long would it take you?  
 a. 2 hours      b. 3 hours      c. 4 hours      d. 5 hours
28. A is 3 years older to B and 3 years younger to C, while B and D are twins. How many year older is C and D?  
 a. 3      b. 6      c. 9      d. 12
29. A girl counted in the following way on the fingers of her left hand: She started by calling the thumb 1, the index finger 2, middle finger 3, ring finger 4, little finger 5 and then reversed direction calling the ring finger 6, middle finger 7 and so on. She counted up to 1994. She ended counting on which finger?  
 a. Ring finger      b. Middle finger      c. Thumb      d. Index finger
30. A monkey climbs 30 feet at the beginning of each hour and rests for a while when he slips back 20 feet before he again starts climbing in the beginning of the next hour. If he begins his ascent at 8.00 a.m., at what will he first touch a flag at 120 feet from the ground?  
 a. 4 p.m.      b. 5 p.m.      c. 6 p.m.      d. 8 p.m.
31. The image formed by a concave lens is  
 a. Virtual, erect, magnified      b. Virtual, erect, diminished  
 c. Real, inverted, magnified      d. Real, inverted, diminished
32. Which one of the following statement is not true regarding the value of acceleration due to gravity?  
 a. Decreases with increase in height from earth's surface      b. Increases with increase in depth from earth's surface  
 c. Decreases with increase in depth from earth's surface      d. Both 'a' and 'b'
33. The shell closest to the nucleus in an atom has ..... energy.  
 a. Lowest      b. Highest      c. Intermediate      d. Zero
34. Alloy is a  
 a. Homogenous mixture      b. Heterogenous mixture      c. Solution      d. metalloid
35. Phenolphthalein is ..... in acidic medium and ..... in basic medium.  
 a. Pink, colorless      b. Colorless, pink      c. Colorless, yellow      d. Yellow, colorless
36. Which among the following is not a noble gas?  
 a. Krypton      b. Boron      c. Xenon      d. Radon
37. Eukaryotic organisms have..... type of ribosome  
 a. 70S      b. 80S      c. 60S      d. Both 'a' and 'b'
38. Plant body of fern is  
 a. Sporophytic      b. Gametophytic      c. Heterophytic      d. Holophytic
39. Water vascular system is the characteristic features of  
 a. Arthropoda      b. Echinodermata      c. porifera      d. Mollusca
40. A stone is dropped from the top of a tower of 40m height. At the same time another stone is thrown vertically upward with a velocity of  $20\text{ms}^{-1}$ . At what height from the ground do they meet?  $g = 10\text{ m/s}^2$   
 a. 20 m      b. 2m      c. 40m      d. 10m
41. The Domain of function  $f(x) = \sqrt{x+3}$  is:  
 a.  $x \geq 3$       b.  $x \geq -3$       c.  $x \leq 3$       d.  $x \leq -3$
42. If  $S_n = 3n + 2n$  then  $t_n$  is equal to :  
 a.  $3n + 1$       b.  $6n - 1$       c.  $3n - 1$       d.  $6n + 1$
43. The root of the equation  $3^{x+2} + 3^x = 30$  is:  
 a. 0      b. 3      c. 2      d. 1
44. If  $a\vec{i} - 2\vec{j} + 3\vec{k}$  and  $3\vec{i} + 6\vec{j} - 5\vec{k}$  are perpendicular, then  $a =$   
 a. 9      b. 16      c. 25      d. 36
45. The value of  $\sin^{-1}\frac{1}{2} + \cos^{-1}\frac{1}{2}$  is  
 a.  $\pi/2$       b.  $-\pi/2$       c.  $\pi/3$       d.  $-\pi/3$
46. Evaluate:  $\begin{vmatrix} 1 & 2 & 4 \\ 1 & 3 & 9 \\ 1 & 4 & 16 \end{vmatrix}$   
 a. 2      b. 4      c. 8      d. 16
47. The distance between points  $(-4, 3, 6)$  and  $(2, 1, -3)$  is:  
 a.  $10\sqrt{2}$       b. 10      c.  $12\sqrt{3}$       d. 11
48. The radius of the circle  $3x^2 - 3y^2 - 8x - 10y + 3 = 0$  is:  
 a.  $\frac{4}{3}\sqrt{2}$       b. 9      c.  $8/3$       d. None
49. Sum of the squares of first 'n' natural number is:  $n(n+1)$   
 a.  $\frac{n(n+1)}{2}$       b.  $\frac{n(n+1)(2n+1)}{6}$       c.  $\frac{n(n^2+1)}{n+1}$       d.  $\frac{n}{2} [2a + (n-1)d]$
50. The area of an isosceles triangle is  $240\text{ cm}^2$  and its base is 20cm. Find equal sides of triangle.  
 a. 22cm      b. 24cm      c. 26cm      d. 28cm