1. How many medals did India win in Rio Olympics, 2016?

a. 3 *b.* 5 *c.* 2 *d.* 4

2. A series is given, with one number missing. Choose the correct alternative from the given ones that will complete the series.

1.14, 1.28, 1.42, ?, 1.70, 1.84

a. 1.68 *b.* 1.56 *c.* 1.54 *d.* 1.62

3. If the width of a standard engineering drawing sheet is 841 mm, then its length would be ..... mm.

a. 1000 *b.* 1250 *c.* 1216 *d.* 1189

4. RK Narayan is famous for his book.

a. A Suitable Boy
b. Malgudi Days
c. Two Lives
d. The Toom on the Roof

5. Choose the figure that is different from the rest.

a. *b.* *c.* *d.*

6. Pipes *A* and *B* can fill a tank in 12 minutes and 16 minutes respectively. Both *A* and *B* are opened for 4 minutes and then *A* is closed. How much extra time will *B* take to fill the tank completely?

a. $\frac{20}{3}$ min *b.* $\frac{21}{4}$ min *c.* 7 min *d.* 6 min

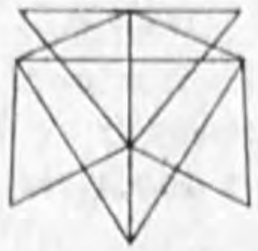
7. A sum of ₹ 10000 amounts to ₹ 11449 in 2 years, when the interest is compounded annually. The interest rate percent per annum is

a. 6% *b.* 1% *c.* 8% *d.* 7%

8. If a body has a specific gravity of less than 1, then it will float in/on

a. mercury *b.* air *c.* water *d.* liquids

9. What is the minimum number of lines required to make the given image?



a. 10 *b.* 9 *c.* 12 *d.* 11

10. A car covers 400 m in 20 seconds. Find the average speed (in km/h) of the car.

a. 124 *b.* 36 *c.* 108 *d.* 72

11. Select the option that is related to the third term in the same way as the second term is related to the first term.

Tall : Short : : Glad : ?

a. Emotion *b.* Happy
c. Smile *d.* Sad

12. Substances that are broken down by biological processes are said to be

a. biodegradable *b.* reusable
c. non-reusable *d.* non-biodegradable

13. Name the painter of the famous painting, 'Mahishasura'.

a. MF Hussain *b.* Raja Ravi Verma
c. Amrita Sher-Gill *d.* Tyeb Mehta

14. A series is given, with one term missing. Choose the correct alternative from the given ones that will complete the series.

OOOOOX, OOOOXX, OOOXXX, OOXXXX?

a. OOXXXX *b.* OOXXXXX
c. XXXXXX *d.* OXXXXX

15. A brass rod (thermal conductivity 109 J/s m K) has an area of cross section 0.04 m^2 and length 20 cm. If the two end of the rod are maintained at a temperature difference of 200°C, the rate of heat flow through the rod is

a. 4.36 kJ/s *b.* 2.32kJ/s
c. 3.42 kJ/s *d.* 5.80 kJ/s

16. Given below are some letters, that each of these letters has a corresponding number. Select the combination of numbers from the options so that the jumbled letters arranged accordingly will form a meaningful English word.

H T R U O A
1 2 3 4 5 6

a. 2, 1, 5, 3, 4, 6 *b.* 3, 4, 5, 2, 1, 6
c. 6, 4, 2, 1, 5, 3 *d.* 1, 6, 2, 4, 5, 3

17. An article was sold for ₹ 12000. Had a discount of 15% been offered, a profit of 2% would have been made. What was the cost price?

a. ₹ 10000 *b.* ₹ 10800 *c.* ₹ 11000 *d.* ₹ 10200

18. What is the curved surface area of a hemisphere whose radius is 7 cm?

a. 616 cm^2 *b.* 924 cm^2
c. 154 cm^2 *d.* 308 cm^2

19. An object weighs *X* units on the Earth. If we take the same object to the Moon, its weight there will be

a. zero *b.* more than *X*
c. equal to *X* *d.* less than *X*

20. In angular measurements, one radian is equivalent to ..... degrees (approximately).

a. 90 *b.* 65.27 *c.* 180 *d.* 57.27

21. A cylindrical wire of length *L* and radius *r* has a resistance of *R*. The resistance of another wire of the same material but thrice its length and one-third its radius will be

a. 3R *b.* 27R *c.* 9R *d.* R

22. Who was the first Governor of the Reserve Bank of India?

a. Sir Osborne A. Smith *b.* KR Puri
c. Sir James Braid Taylor *d.* HVR Iyengar

23. The abbreviation AC in an engineering drawing stands for
a. Air Conditioning *b.* Attached Circle
c. Aerial Cut *d.* Across Corners

24. Which Indian cricketer received the Padma Bhushan in 2018?
a. Virat Kohli *b.* Sachin Tendulkar
c. Saurav Ganguly *d.* MS Dhoni

25. I, J, K and L are sitting in a row. L and I are sitting next to each other and I and K are at the ends. Who is sitting next to J?
a. K and L *b.* Only L
c. Only K *d.* L and I

26. Given below is a question, followed by two arguments, I and II. Yóu have to decide which of the given arguments, if any, is a strong argument, with respect to the question.
Question Should advertisements be banned on television?
Argument I Yes, advertisement are immoral.
Argument II No, advertisement bring in revenue which helps reduce cost for viewers.
a. Neither I nor II is strong.
b. Both I and II are strong.
c. Only Argument II is strong.
d. Only Argument I is strong.

27. Two resistors of 10 Ω and 20 Ω are connected in series and this combination is connected across a 30 V supply voltage. Find the voltage across the 10 Ω resistor.
a. 20 V *b.* 10 V *c.* 15 V *d.* 5 V

28. What is the least number which when doubled is perfectly divisible by 7, 12 and 15?
a. 220 *b.* 215 *c.* 214 *d.* 210

29. Safety boots or shoes must be worn in designated areas to protect your ..... from falling objects.
a. feet *b.* ear *c.* eye *d.* head

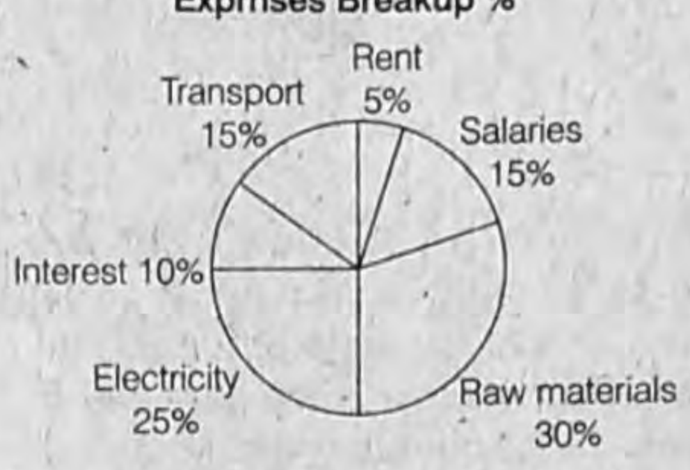
30. You are given a question and two statements. Identify which of the statements is/are necessary/sufficient to answer the question.
Question What was the discount percent offered on the soap by the store?
Statements
I. The store is giving I soap free on purchase of three.
II. ₹ 10 discount is offered on purchase of soap worth ₹ 36.
a. I alone is sufficient while II alone is not sufficient.
b. Either I or II is sufficient.
c. Neither I nor II is sufficient.
d. II alone is sufficient while I alone is not sufficient.

31. A ..... is a theoretical exact plane, axis or point location that GD and T or dimensional tolerances are referenced to.
a. flange *b.* datum
c. frame *d.* section

32. A got ₹ 80 as his share of profit where the total profit was ₹ 240 and the ratio of profit distribution between *A* and *B* was *x*, what is the value of *x*?
a. 4 *b.* 5 *c.* 2 *d.* 1

33. In engineering drawing, the letters LH signifies
a. Low Heat *b.* Limit of Height
c. Level Hide *d.* Left Hand

34. The pie chart shows the breakup in percentages of the various expenses of a Comapny. Study the diagram and answer the following question.



What is the interest expense if total expenses are ₹ 25000 approximately?
a. ₹ 2500 *b.* ₹ 1800
c. ₹ 9000 *d.* ₹ 5000

35. What is the unit's digit in $3^{66} \times 6^{41} \times 7^{53}$
a. 8 *b.* 7 *c.* 6 *d.* 3

36. If straight lines are drawn from various points on the contour of an object to meet a plane, the figure obtained on the plane is called the ..... of the object.
a. animation *b.* dimensioning
c. development *d.* projection

37. If a body is not homogeneous, then its density is a function of its
a. position *b.* acceleration
c. velocity *d.* pressure

38. An object starts from rest at $x = 0$ m and moves with a constant acceleration of 1.6 m/sec^2 along the *x*-axis. During its journey from $x = 12.8$ m to $x = 20.0$ m, its average velocity will be
a. 8.8 m/sec *b.* 3.6 m/sec
c. 2.4 m/sec *d.* 7.2 m/sec

39. Find the odd group of letters from the given alternatives.
a. HJL *b.* VWX *c.* PQR *d.* EFG

40. Velocity ratio of simple machine is the ratio of distance travelled by the ..... to the distance travelled by the ..... in the machine.
a. load; effort *b.* effort; effort
c. load; load *d.* effort; load

41. Which of the following options does not have an SI base unit?
a. Luminous intensity
b. Amount of substance
c. Frequency
d. Electric current

42. What is the distance between the points (4, 3) and (3, −2)?
a. 5 *b.* $\sqrt{24}$ *c.* $\sqrt{26}$ *d.* 6

43. If $\sin\theta = \frac{15}{17}$, then $\cot\theta = ?$
a. $\frac{8}{17}$ *b.* $\frac{17}{15}$ *c.* $\frac{15}{8}$ *d.* $\frac{8}{15}$

44. Identify the material having high coefficient of volume expansion
a. Brass *b.* Glass
c. Alcohol *d.* Water

45. If C $ D means C is daughter of D, C and D means C is mother of D and C % D means C is son of D, then what does W $ X & Y % Z mean?
a. Z is daughter of W. *b.* Z is wife of W.
c. Z is father of W. *d.* Z is mother of W.

46. 86°F is equal to
a. 34°C *b.* 30°C *c.* 20°C *d.* 10°C

47. Two resistors, one of 12 Ω and the other of 24 Ω are connected in parallel. This combination is connected in series with a 22 Ω resistor and a 12 V battery. The current in the 12 Ω resistor is
a. $\left(\frac{4}{15}\right)$A *b.* $\left(\frac{8}{15}\right)$A *c.* $\left(\frac{6}{15}\right)$A *d.* $\left(\frac{2}{15}\right)$A

48. The volume of a given amount of water ..... between 0°C to 4°C.
a. remains constant *b.* is zero
c. increases *d.* decreases

49. Given below is a statement followed by two assumptions numbered I and II. You have to decide which of the assumptions is/are implicit in the statement.
Statement The human body produces Vitamin D when exposed to sunlight.
Assumption I. The human body have Vitamin D even if it is not consumed via food.

Assumption II. A large portion of the global population suffers from Vitamin D deficiency.
a. Only assumption II is implicit.
b. Both I and II are implicit.
c. Only assumption I is implicit.
d. Neither I nor II is implicit.

50. A 4-digit number $1xy7$ is divisible by 11. What is the value of $x - y$?
a. –2 *b.* –8 *c.* –6 *d.* –4

51. A sum of ₹ 2000 was spent in buying a pair of trousers. The sum spent was $\frac{2}{5}$th of the total money Shashi had with her. How much was the total money she had?
a. ₹ 5000 *b.* ₹ 4750
c. ₹ 4000 *d.* ₹ 4250

52. A motorcycle travelled 1000 m at 36 km/h. Find the time (in seconds) taken by the motorcycle to cover this distance.
a. 100 *b.* 400 *c.* 300 *d.* 200

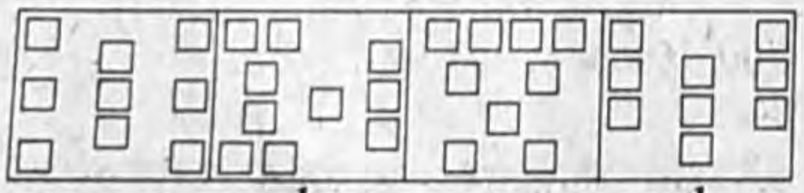
53. A 200 g block of iron was heated from 30°C to 60°C. How much heat was transferred to the block (specific heat of iron is 450 $Jkg^{-1} K^{-1}$)?
a. 27 J *b.* 270 J *c.* 6000 J *d.* 2700 J

54. What is 80% of 50% of 90?
a. 36 *b.* 30 *c.* 32 *d.* 34

55. A source of voltage V maintains a current i in a circuit. The energy supplied to the circuit by the source in time t is
a. Vit *b.* $\frac{1}{Vit}$ *c.* $\frac{Vi}{t}$ *d.* $\frac{V}{it}$

56. The effort in a class 1 lever is in ..... direction(s).
a. two *b.* multiple *c.* three *d.* one

57. Choose the figure that is different from the rest.



a. *b.* *c.* *d.*

58. Given below are two statements, followed by two conclusions, I and II. You have to consider the statements to be true even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follow(s) from the given statements.
Statement I. No quadrilaterals are polygons.
Statement II. All polygons are rhombuses.
Conclusion I. Some rhombuses are quadrilaterals.
Conclusion II. Some rhombuses are polygons.
a. Neither I nor II follows
b. Only conclusion II follows
c. Both I and II follow
d. Only conclusion I follows

59. If G + H means G is daughter of H, G – H means G is sister of H and G * H means G is husband of H, which of the following shows that I is the daughter of H?
a. I * J – F + H *b.* I + J – F * H
c. I – J * F + H *d.* I – J + F * H

60. Greater the value of ..... of a material, the more rapidly it will conduct heat.
a. thermal conductivity *b.* melting point
c. regelation *d.* latent heat

61. If a machine overcomes a load 'L' and the distance travelled by the load is 'Ld', the work done by the load will be
a. $\frac{L}{Ld}$ *b.* $L \times Ld$
c. $\frac{Ld}{L}$ *d.* $\frac{1}{L \times Ld}$

62. A can do 2/5 of a work in 10 days. B can do 1/2 of the same work in 10 days. They worked together for 5 days and then A left. In how many days will B finish the remaining work?
a. 8 *b.* 11 *c.* 10 *d.* 9

63. Unscramble the letters in the words given below and find the odd word out.
a. FLOW *b.* WCO
c. ILNO *d.* ERTIG

64. Where is the Headquarters of UNESCO located?
a. New York City *b.* Washington DC
c. Paris *d.* Geneva

65. Two resistors of 2 Ω and 6 Ω are connected in series and this combination is connected across a 12 V battery. Find the power supplied by the battery.
a. 14 W *b.* 18 W
c. 16 W *d.* 10 W

66. ..... protection must be worn whenever noise levels exceed the noise exposure standard.
a. Hearing *b.* Eye
c. Foot *d.* Head

67. A machine was bought for ₹ 1500 and a repairing charge of ₹ 100 was paid afterwards. At what price should it be sold to gain a profit of 25%?
a. ₹ 2040 *b.* ₹ 2000
c. ₹ 1920 *d.* ₹ 1960

68. A and B can do a work in 15 days, B and C can do the work in 20 days and A and C can do the work in 10 days. In how many days will they together complete the work?
a. 10.71 days *b.* 9.23 days
c. 10.91 days *d.* 10.67 days

69. Which two signs should be interchanged to make the given equation correct?
$9 \div 3 + 8 \times 2 - 15 = 2$
a. + and – *b.* × and –
c. + and – *d.* + and ×

70. The Ajanta Caves in Maharashtra feature paintings and sculptures that depict ..... tales?
a. Buddhist *b.* Arabic
c. Maratha *d.* Islamic

71. What is the work that needs to be done to increase the speed of a 1 kg ball from 2 m/sec to 4 m/sec?
a. 8 J *b.* 10 J *c.* 6 J *d.* 12 J

72. A body starts from rest. It displacement is proportional to ..... when its acceleration is constant.
a. velocity *b.* time squared
c. work *d.* time

73. Two resistors of 2 Ω and 6 Ω are connected in series and this combination is connected across a 12 V battery. Find the current in the 6 Ω resistor.
a. 0.5 A *b.* 1.5 A
c. 3.5 A *d.* 2.5 A

74. Identify the material having low coefficient of volume expansion
a. Aluminium *b.* Iron
c. Mercury *d.* Brass

75. Two planes E and F start fyling from the same point. E flies 7 km West, then turns to its left and flies 15 km. Meanwhile F flies 11 km East and turns right and files 15 km. Where is F with respect to E?
a. F is 4 km West of E.
b. F is 18 km West of E.
c. F is 4 km East of E.
d. F is 18 km East of E.

76. If $x = \sqrt{125} \times \sqrt{130} \times \sqrt{6}$, then x is equal to :
a. 125 *b.* 175 *c.* 136 *d.* 150

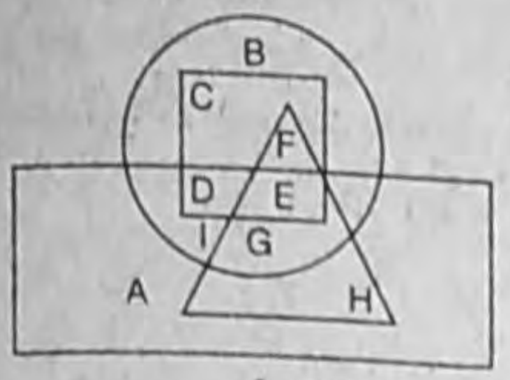
77. Kuchipudi has its roots in which Indian State?
a. Himachal Pradesh
b. Kerala
c. Andhra Pradesh
d. Arunachal Pradesh

78. If, '+' represents '×', '–' represents '+' '×' represents '+' and '+' represents '–', then find the value of the following expression.

$9 \times 3 + 6 + 2 = ?$

a. 10 *b.* 20 *c.* 12 *d.* 16

79. In the following figure, square represents Chinese, triangle represents dancers, circle represents male and rectangle represents architects. Which set of letters represents dancers who are male?



a. IGH *b.* DEIG
c. DEF *d.* GEF

80. In a code language, 295 means 'water is liquid', 549 means 'oil is liquid' and 824 means 'oil on water'. Find the code for 'on'.

a. 4 *b.* 8 *c.* 2 *d.* 5

81. $\sec 45° - \tan 60° = ?$

a. $\sqrt{3} + \sqrt{2}$ *b.* $-\sqrt{3} - \sqrt{2}$

c. $-\sqrt{3} + \sqrt{2}$ *d.* $\frac{\sqrt{3}}{2}$

82. What is the median of 8, 5, 7, 9, 11, 6, 10 ?

a. 10 *b.* 7 *c.* 8 *d.* 9

83. It is mainly due to the gravitational effect of the ..... on the rotating earth that the level of water in the sea rises and falls.

a. Sun *b.* Venus
c. Mercury *d.* Moon

84. Reflection of point (–2, –6) on the Y-axis is

a. (–6, –2) *b.* (–2, 6)
c. (2, 6) *d.* (2, – 6)

85. The ages of *X* and *Y* are in the ratio 4 : 7. Three years earlier, the ratio of their ages was 1 : 2. What is the difference between their current ages $(Y - X)$?

a. 9 *b.* 7.5 *c.* 6 *d.* 3

86. A software programme that has been developed to harm other computers is called a/an

a. operating system *b.* server
c. LAN *d.* malware

87. A number is as much greater than 50 as it is lesser than 84. What is the number?

a. 68 *b.* 65 *c.* 66 *d.* 67

88. JPEG stands for

a. Joint Photographic Experts Group
b. Joint Program Experts Group
c. Joint Program Executing Group
d. Joint Program Experimental Group

89. The effort applied to move a load is 15 units and the machine advantage is observed to be 3. Find the load.

a. 15 units *b.* 5 units
c. 3 units *d.* 45 units

90. In an examination, the highest score and the lowest score differed by 55 and the higher one was 9/4 times the lower one. What is the lowest score?

a. 48 *b.* 36 *c.* 44 *d.* 40

91. A salesperson starts from his office and drives 2 km East, then turns North and drives 7 km, then turns to his right and drives 6 km, then turns South and drives 7 km. Where is he now with respect to his starting position?

a. 8 km West *b.* 4 km East
c. 4 km West *d.* 8 km East

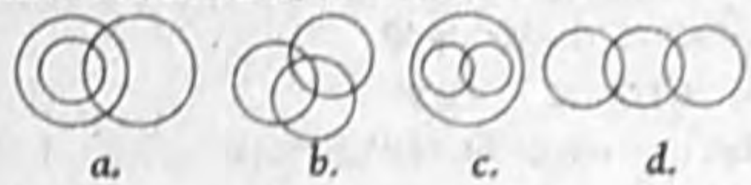
92. Select the option that is related to the third number in the same way as the second number is related to the first number.

$-\frac{9}{11} : \frac{11}{9} :: \frac{13}{2} : ?$

a. $-\frac{7}{3}$ *b.* $\frac{3}{7}$

c. $\frac{2}{13}$ *d.* $-\frac{2}{13}$

93. Which of the following Venn diagram best represents the relationship between Indians, doctors and women?



a. *b.* *c.* *d.*

94. Molar specific heat capacity of a substance is

a. $\mu\left(\frac{\Delta T}{\Delta Q}\right)$ *b.* $\mu\left(\frac{\Delta Q}{\Delta T}\right)$

c. $\left(\frac{1}{\mu}\right)\left(\frac{\Delta T}{\Delta Q}\right)$ *d.* $\left(\frac{1}{\mu}\right)\left(\frac{\Delta Q}{\Delta T}\right)$

95. An airoplane flies at the speed of 50 m/sec. How much distance (in km) will it cover in a flight of 5 hec?

a. 895 *b.* 900 *c.* 880 *d.* 850

96. Name the scientist who discovered bacteria

a. James Chadwick *b.* Eugen Goldstein
c. AV Leeuwenhoek *d.* Robert Koch

97. Which one of these is a harvest festival?

a. Onam *b.* Janmashtami
c. Deepawali *d.* Teej

98. Tap *M* and *N* can together fill a cistern in 48/13 minutes. *N* alone can fill it in 6 minutes. How much time will *M* alone take to fill the cistern?

a. 9 min *b.* 9.4 min *c.* 9.6 min *d.* 8.6 min

99. A wire of length 1 and radius *r* has a resistance *R*. The resistance of another wire made of the same material but having half its length and half its radius will be

a. 2*R* *b.* *R*/2 *c.* 4*R* *d.* *R*

100. If $5050 \times 0.5x = 25250$, then $2505 + x^2 = ?$

a. 25.05 *b.* 2.505 *c.* 250.5 *d.* 0.2505