

# Talent Search Exam. 2015

TEST  
CODE

**7000**

for VII

BOOKLET

**B**

Duration : 3 Hours

Max. Marks : 300

*Please read the instructions carefully. You are allotted 5 minutes specifically for this purpose.*

## INSTRUCTIONS

### A. General :

1. This booklet is your question paper containing **100 questions**. The booklet has **9 pages**.
2. The question paper contains blank space on back for your rough work. No additional sheets will be provided for rough work.
3. It is mandatory to use **Blue or Black Ball Point Pen** to darken to appropriate circle in the answer sheet.
4. Blank papers, clipboards, log tables, slide rules, calculators, cellular phones, pagers and electronic gadgets in any form are not allowed to be carried inside the examination hall.
5. Fill in the boxes provided below on this page and also write your Name and Roll Number in the space provided.
6. Do not use white-fluid or any other rubbing material on answer sheet. Before handing over the answer sheet to the invigilator, candidate should check that **Roll No, Test code and Book Code** have been filled and marked correctly. Immediately after the prescribed examination time is over, the **Answer sheet is to be returned to the invigilator**.

### B. Filling the Answer Sheet :

7. On **Side-1** of Answer Sheet write your name, Enrollment Number and Name of the centre in the respective boxes. **Do not write anything on Side-2.**
8. Put your signature space provided on the Answer Sheet affirming that you have verified this.
9. All question carry **+3 Marks** for Right Answer and **-1** for Wrong Answer.

## PROCEDURE OF FILLING UP THE ANSWERS IN ANSWER SHEET

### Wrong Filling

- ✓ B C D Tick mark
- ✗ B C D Cross mark
- ◐ B C D Half filled or semi dark
- ◑ A B C D Light filled

### Right Filling

- B C D Fully darken with Pen
- B C D Fully darken with Pen
- B C D Fully darken with Pen
- B C D Fully darken with Pen

Name of the candidate (In Capital Letters)

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Enrollment Number

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I have read all the instruction and shall abide by them.

.....

(Signature of the candidate)

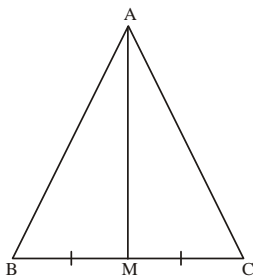
I have verified all the information filled in by the candidate.

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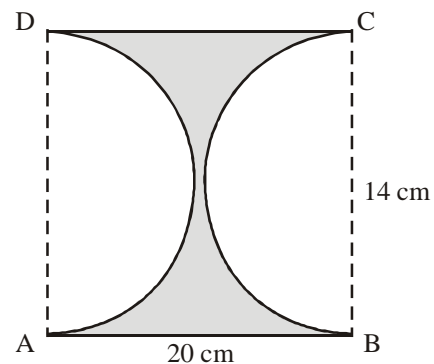
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**PART-I (MATHEMATICS)**

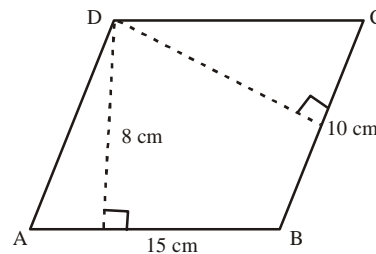
- If  $\left(\frac{5}{12}\right)^8 \times \left(\frac{12}{5}\right)^{-4} = \left(\frac{125}{1728}\right)^x$ , find x  
 (a) 2 (b) 4  
 (c) 3 (d) 12
- $\left(\frac{x^b}{x^c}\right)^a \times \left(\frac{x^c}{x^a}\right)^b \times \left(\frac{x^a}{x^b}\right)^c$   
 (a) 1 (b) 0  
 (c) abc (d)  $\frac{a}{b}$
- How much should  $5x^3 + 3x^2 - 2x + 1$  be increased to get  $6x^2 + 7$ ?  
 (a)  $5x^3 - 3x^2 + 2x + 6$  (b)  $5x^3 + 3x^2 + 2x + 6$   
 (c)  $-5x^3 - 3x^2 - 2x + 6$  (d)  $-5x^3 + 3x^2 + 2x + 6$
- Half metre cloth costs Rs. 30. How much would  $2\frac{3}{5}$  metres cost?  
 (a) 196 (b) 156  
 (c) 140 (d) none
- In the month of June the temperature of Delhi is  $-10^\circ\text{C}$ . This is  
 (a) impossible event (b) Sure event  
 (c) none of these (d)  $\frac{1}{2}$
- A table is sold for Rs 552 at a loss of 8%. At what price must it be sold to gain 10%?  
 (a) 780 (b) 660  
 (c) 680 (d) 720
- The collection of facts which are expressed numerically with the specific purpose is called  
 (a) data (b) information  
 (c) (a) and (b) both (d) none of these
- In fig if AM is median of a triangle ABC. Then



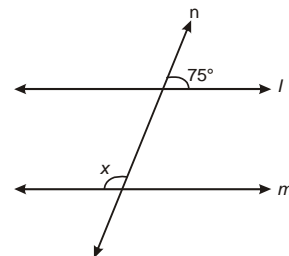
- (a)  $AB + BC + CA > 2AM$   
 (b)  $AB + AM + CA > 2BC$   
 (c)  $AB + AM + BC > 2CA$   
 (d)  $AM + BC + CA > 2AB$
- The diagonals of a rhombus measure 16cm and 30 cm. Find its perimeter?  
 (a) 170 cm (b) 72 cm  
 (c) 80 cm (d) 68 cm
- If  $\triangle ABC \cong \triangle PQR$  and  $\angle CAB = 65^\circ$ , then  $\angle RPQ$  is  
 (a)  $65^\circ$  (b)  $75^\circ$   
 (c)  $90^\circ$  (d)  $115^\circ$
- ABCD is a rectangle Two semicircles are cut from each of two breadths as diameters. Find the area of the shaded region  $\left(\pi = \frac{22}{7}\right)$



- (a) 130 (b) 126  
 (c) 134 (d) none
- In Fig, two adjacent sides of a parallelogram are 15 cm and 10 cm. If the distance between the longer sides is 8cm, find the distance between the shorter sides



- (a) 10 cm (b) 12 cm  
(c) 16 cm (d) 14 cm
13. How many times a wheel of radius 28 cm must rotate to go 352 cm?  
(a) 6 (b) 2  
(c) 4 (d) 3
14. A wire is in the form of a square of side 27.5 cm. It is straightened and bent into the shape of a circle. Find the area of the circle.  
(a) 1024.25 (b) 962.5  
(c) 786.5 (d) 411.04
15. A square lawn has a 4m wide path surrounding it. If the area of the path is  $256 \text{ m}^2$ , find the area of the lawn.  
(a) 144 (b) 169  
(c) 100 (d) 900
16. The base of an isosceles triangle is 20 cm and its perimeter is 42 cm. Find its area.  
(a)  $\sqrt{299}$  (b)  $26\sqrt{13}$   
(c)  $8\sqrt{21}$  (d)  $10\sqrt{21}$
17. A tree is broken at a height of 5m from the ground and its top touches the ground at a distance of 12 m from the base of the tree. Find the original height of the tree.  
(a) 19 m (b) 13 m  
(c) 18 m (d) 7 m
18. A man borrowed Rs. 7000 from a bank for 3 years at 7% per annum. The amount he will have to pay after the specified time  
(a) Rs 1470 (b) Rs 8470  
(c) Rs. 9940 (d) Rs 8000
19. In an examination, a student has to secure 45% marks to pass the exam. If Varun got 251 marks and failed by 19 marks, what are the maximum marks?  
(a) 600 (b) 491  
(c) 270 (d) 620
20. Multiplication of integers satisfies the property of  
(a) closure (b) commutativity  
(c) associativity (d) All of these
21. If the sum of two integers is - 10 and one of them is 2, then the other is  
(a) 8 (b) -8  
(c) 12 (d) -12
22. Arif bought 3 dozen eggs. He found  $\frac{1}{9}$  of them were rotten. The number of rotten eggs was  
(a) 4 (b) 3  
(c) 6 (d) 8
23. 30 m 5 cm is same as  
(a) 30.5 m (b) 3.05 m  
(c) 30.05 m (d) 30.005 m
24. The product of rational number  $-2\frac{3}{7}$  &  $\frac{7}{17}$  is  
(a) 1 (b) -1  
(c)  $\frac{4}{25}$  (d)  $\frac{2}{5}$
25. The sum of two rational numbers is -1. If one of them is  $\frac{-5}{7}$ , then the other is  
(a)  $\frac{5}{7}$  (b)  $\frac{-2}{7}$   
(c)  $\frac{12}{7}$  (d)  $\frac{-12}{7}$
26. If  $2^3 + 1^3 = 3^x$ , then the value of x is  
(a) 0 (b) 1  
(c) 2 (d) 3
27. If the length of a rectangle is twice its breadth and its perimeter is 120 m, then its length is  
(a) 20 m (b) 40 m  
(c) 60 m (d) 30 m
28. If the difference of two complementary angles is  $10^\circ$ , then the smaller angle is  
(a)  $40^\circ$  (b)  $50^\circ$   
(c)  $45^\circ$  (d)  $85^\circ$
29. In the adjoining figure, if  $l \parallel m$  then the value of x is



- (a)  $x = 75^\circ$  (b)  $x = 95^\circ$   
(c)  $x = 105^\circ$  (d)  $x = 115^\circ$

30. If the height of a parallelogram is doubled and base tripled, then its area becomes  
 (a) 2 times (b) 3 times  
 (c) 6 times (d) 12 times
31. If the area of a circle is numerically equal to its circumference, then the radius of the circle is  
 (a) 1 unit (b) 2 units  
 (c) 3 units (d) 4 units
32. A quadrilateral having four lines of symmetry is a  
 (a) parallelogram (b) rectangle  
 (c) rhombus (d) square
33. A figure that does not have any rotational symmetry is  
 (a) circle (b) parallelogram  
 (c) kite (d) regular pentagon
34. Rotating a figure by  $60^\circ$  anticlockwise is equivalent to a clockwise rotation of  
 (a)  $60^\circ$  (b)  $120^\circ$   
 (c)  $240^\circ$  (d)  $300^\circ$
35. A square pyramid has  
 (a) 4 vertices and 4 faces  
 (b) 4 vertices and 5 faces  
 (c) 5 vertices and 4 face  
 (d) 5 vertices and 5 faces

## PART-II (SCIENCE)

36. The unit to measure electric resistance is :  
 (a) Joule (b) Ohm  
 (c) Ampere (d) Volt
37. When an electric current pass through a solenoid, it acts as a/an  
 (a) insulator (b) electric bell  
 (c) resistor (d) bar magnet
38. Which of the following is an essential element in an electric circuit?  
 (a) switch (b) connecting wires  
 (c) voltmeter (d) ammeter
39. Which of the following acts as safety device in electric appliances?  
 (a) fuse (b) connecting wires  
 (c) resistors (d) battery
40. Compact fluorescent lamps (CFLs) are considered better than ordinary electric bulbs because?  
 (a) CFLs reduce wastage  
 (b) CFLs can be fixed in the ordinary bulb holders  
 (c) both (a) and (b)  
 (d) none of the above
41. When matter gets warmer, the atoms and molecules in that matter \_\_\_\_\_  
 (a) stand still (b) move faster  
 (c) move slower (d) can't say
42. Higher the temperature of the body\_\_\_\_is the kinetic energy of the molecules of that body?  
 (a) higher (b) lower  
 (c) same (d) none of these
43. Unit of heat energy is  
 (a) kilogram (b) metre  
 (c) joule (d) degree
44. One litre of water at  $30^\circ\text{C}$  is mixed with one litre of water at  $50^\circ\text{C}$ . The temperature of the mixture will be.  
 (a)  $80^\circ\text{C}$   
 (b) more than  $50^\circ\text{C}$  but less than  $80^\circ\text{C}$   
 (c)  $20^\circ\text{C}$   
 (d) between  $30^\circ\text{C}$  and  $50^\circ\text{C}$
45. In Fahrenheit scale, water freezes at  
 (a)  $0^\circ\text{F}$  (b)  $32^\circ\text{F}$   
 (c)  $40^\circ\text{F}$  (d)  $212^\circ\text{F}$
46. Sea breeze is caused due to  
 (a) conduction (b) convection  
 (c) radiation (d) all of these
47. A polished silvery surface is  
 (a) good absorber of heat  
 (b) good reflector of heat  
 (c) poor reflector of heat  
 (d) none of these
48. Device used for measuring temperature is called a / an  
 (a) Barometer (b) Odometer  
 (c) Thermometer (d) Speedmeter

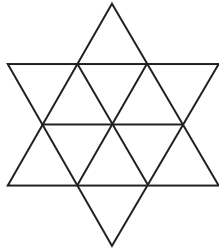
49. Which of the following instrument measures time with the most accuracy?  
(a) sun dial (b) sand clock  
(c) quartz clock  
(d) mechanical clock with gears
50. 36 km/hr can also be expressed as :  
(a) 10 m/s (b) 3.6 m/s  
(c) 100 m/s (d) 36 m/s
51. The motion that repeats itself after regular intervals of time can be\_\_\_\_\_(Find the incorrect option)  
(a) To and Fro motion  
(b) Circular Motion  
(c) Rectilinear Motion  
(d) Periodic Motion
52. An erect and enlarged image can be formed by  
(a) only a convex mirror  
(b) only a concave mirror  
(c) only a plane mirror.  
(d) both convex and concave mirrors.
53. Structure in the cell that contain chlorophyll :  
(a) Stomata (b) Guard cells  
(c) chloroplast (d) Mitochondria
54. During photosynthesis, the stomata help in the intake of  
(a) carbon dioxide (b) Oxygen  
(c) Water (d) Nitrogen
55. The organ that stores bile is :  
(a) Stomach (b) Liver  
(c) Pancreas (d) Gall bladder
56. During the process of digestion, carbohydrates are broken down into :  
(a) Glucose (b) Minerals  
(c) Proteins (d) Vitamins
57. Some animals go into deep summer sleep to escape the heat. This summer sleep is called :  
(a) Hibernation (b) Aestivation  
(c) Migration (d) Orientation
58. Which of the following terms is associated with adaptations in the polar region?  
(a) Hibernation (b) Blubber  
(c) Migration (d) All of these
59. The upper layer of the soil is generally dark in colour because :  
(a) Crops grow in it  
(b) It is rich in humus & minerals  
(c) Organisms live in it  
(d) It is a mixture of clay & loam
60. Percolation rate of the soil is :  
(a) The rate at which water evaporates from the soil  
(b) The rate at which the soil loses water  
(c) The rate at which water is absorbed by the soil  
(d) The rate at which water enters and move through the soil
61. Anaerobic respiration in human being takes place during :  
(a) Eating (b) Sleeping  
(c) Rigorous exercise (d) Cooking
62. Muscle cramps result due to  
(a) Accumulation of glucose in the muscles  
(b) Accumulation of oxygen in the muscles  
(c) Accumulation of lactic acid in the muscles  
(d) Accumulation of carbon dioxide and water in the muscles
63. The blood carried by the pulmonary artery is  
(a) Oxygenated (b) carbonated  
(c) Deoxygenated (d) None of these
64. Which of the following is not a waste material excreted by plants?  
(a) Gum (b) Resin  
(c) Latex (d) Urine
65. Maria placed a leaf of Bryophyllum plant on moist sand several weeks later, she observed young plants growing from the edges of the leaf. This type of reproduction is called  
(a) Fragmentation  
(b) Vegetative reproduction  
(c) Budding  
(d) Sporulation

66. A large chunk of ice which moves like a river over the surface of the land :
- (a) Iceberg (b) Glacier  
(c) Hail (d) Frost
67. The layer of a forest which has dead and decaying material is the :
- (a) Forest floor (b) Understorey  
(c) Canopy (d) Emergent layer
68. Chlorophyll helps the plants to
- (a) Exchange gases  
(b) Transport food from the leaves to the other parts.  
(c) Absorb water from the stem  
(d) Absorb energy from the sunlight
69. Human brain contain \_\_\_\_\_% of water
- (a) 85% (b) 30%  
(c) 95% (d) 70%
70. Hard water contain \_\_\_\_\_?
- (a) Mg and Ca ions  
(b) Na and K ions  
(c) Na and Ca ions  
(d) K and mg ions
71. World water day is celebrated on?
- (a) 22 March (b) 20 Nov.  
(c) 26 Aug. (d) 8 Dec.
72.  $\text{HCl} + \text{NaOH} \rightarrow \text{NaCl} + \text{H}_2\text{O}$  is
- (a) Neutrilsation reaction  
(b) Acid forming reaction  
(c) Base forming reaction  
(d) None of these
73. Main gas in natural gas is \_\_\_\_\_.
- (a) Methane (b) Propane  
(c) Ethane (d) Butane
74. \_\_\_\_\_ is used as coating on non-stick cookware
- (a) Teflon (b) Lycra  
(c) Dacron (d) ZnS
75. Atul was given a colourless solution in a test tube. He put a drop of this solution on blue litmus paper. It change in to red colour. The colourless solution is
- (a) acidic in nature (b) basic in nature  
(c) neutral in nature (d) nothing can be said
76. Which of the following statement is true?
- (a) Acids are sour in taste and soapy to touch.  
(b) Bases are sour in taste and soapy to touch  
(c) Acids are bitter in taste and soapy to touch  
(d) Bases are bitter in taste and soapy to touch
77. Orange juice is sour in taste due to the presence of
- (a) acetic acid (b) citric acid  
(c) formic acid (d) tartaric acid
78. Which of the following is added to the soil if it is too basic?
- (a) Calamine solution (b) Milk of magnesia  
(c) Organic matter (d) Tartaric acid
79. Carbon dioxide is taken in from the atmosphere by the plants through
- (a) roots (b) stem  
(c) leaves (d) all of these
80. Which of the following is a saprophyte?
- (a) Amarbel (b) Lichen  
(c) Mushroom (d) None of these
81. Which of the following is/are raw material (s) for photosynthesis?
- (a) Water  
(b) Water and carbon dioxide  
(c) Sunlight, water and carbon dioxide  
(d) Sunlight, chlorophyll, water and carbon dioxide
82. Salt are prepared by reaction of ?
- (a) Acid & base (b) Acid & Acid  
(c) Base & Base (d) All of these
83. Crystallization is a process of obtaining
- (a) pure solids only  
(b) pure liquids only  
(c) pure gas only  
(d) all of these
84. Observe the following two changes. Change A : Biogas is produced by decomposition of animal and plant waste by anaerobic bacteria. Change B : Biogas is burnt as other fuels. Which of these is a chemical change?
- (a) Change A (b) Change B  
(c) Both (a) and (b) (d) None of these
85. Rusting of iron can be provented by
- (a) galvanizing (b) electroplating  
(c) alloying (d) all of these

## PART-III (REASONING)

86. If a standard-sized cigarette can be rolled out of 6 standard-sized cigarette butts (filters). How many cigarettes will a person be able to smoke if he has 200 cigarettes.
- (a) 200 (b) 239  
(c) 233 (d) 238
87. Suppose a clock strikes as many no. of gongs as is the time for eg. - 1 gong at 1 O'clock, 2 gongs at 2 O'clock and so on. If this same clock takes 7 seconds to strike 7 O'clock. How long will the clock take to strike 10 O'clock?
- (a)  $\frac{21}{2}$  seconds (b) 10 seconds  
(c) 7 seconds (d)  $\frac{35}{3}$  seconds
88. A woman drives her husband every morning to Howrah station and picks him up from the station and takes him home. She picks him up at 5 p.m. one day the man was let off at work an hour earlier and he arrived at the station at 4 p.m. He started walking home and met his wife enroute to the station and got into the car. They arrived 10 min. earlier. How long did the man walk before he was picked up by his wife?
- (a) 55 min. (b) 50 min.  
(c) 65 min. (d) 60 min.
89. Rohit said to Mayank that he was ten years old two days back and next year he will be thirteen. How old is Rohit?
- (a) 10 (b) 11  
(c) 12 (d) 13
90. A cement block balances evenly on the scales with three quarters of a kg. and three quarters of a block. What is the weight of the whole block.
- (a) 1 kg. (b) 2 kg.  
(c) 2.5 kg. (d) 3 kg.
91. While in San Francisco some time back, I hired a car to drive over the Golden Gate bridge. I started in the afternoon when there was no traffic rush. So I could drive at a speed of 40 miles an hour. While returning, however, I got caught in the traffic rush and I could only manage to drive at a speed of 25 miles an hour.
- What was my average speed for the round trip?
- (a)  $\frac{65}{2}$  (b) 65  
(c)  $\frac{205}{13}$  (d)  $\frac{400}{13}$
92. One morning I was on my way to the market and met a man who had 4 wives. Each of the wives had 4 bags, containing 4 dogs and each dog had 4 puppies.
- Talking all things into consideration, how many were going to the market?
- (a)  $2^8$  (b)  $2^4$   
(c)  $2^2$  (d)  $2^0$
93. Mammu wears socks of two different colours-white and brown. She keeps them all in the same drawer in a state of complete disorder.
- She has altogether 20 white socks and 20 brown socks in the drawer. Supposing she has to take out the socks in the dark, how many must she take out to be sure that she has a matching pair?
- (a)  $2^4 + 4$  (b)  $2^4 + 5$   
(c)  $2^0 + 1$  (d)  $2^1 + 1$
94. Here is an ancient problem from Bhaskaracharya's Lilavati :
- A beautiful maiden, with beaming eyes, asks me which is the number that, multiplied by 3, then increased by three-fourths of the product, divided by 7, diminished by one-third of the quotient, multiplied by itself, diminished by 52, the square root found, addition of 8, division by 10 gives the number 2?
- Well, it sounds complicated, doesn't it? No, not if how to go about it.
- (a) 28 (b) 32  
(c) 34 (d) 26
95. Two trains, a passenger train and a goods train, are running in the same direction on parallel railway tracks. The passenger train takes three times as long to pass the goods train-even when they are going in the opposite directions.
- If the trains run at uniform speeds, how many times faster than the goods train is the passenger train moving?

- (a) Half (b) Twice  
(c) Thrice (d) One and a half
96. If 5 tyres were used on a car which has travelled 20,000 miles, how many miles did each tyre sustain, if all the tyres were used equally in sustaining this mileage?
- (a) 16,000 (b) 4,000  
(c) 20,000 (d) 8,000
97. How many triangles, of any size, are there in this star.



- (a) 18 (b) 12  
(c) 20 (d) 16
98. In a school there were 100 lockers. One day the principal asked 100 boys to come to the locker-room. Initially all the lockers were

closed. He told the 1<sup>st</sup> boy to open all the lockers. He told the 2<sup>nd</sup> boy to work on every 2<sup>nd</sup> locker and said that if the locker is closed, open it and if the locker is open, close it. He called 3<sup>rd</sup> boy and told him the same thing as 2<sup>nd</sup> boy except to work on every 3<sup>rd</sup> locker. He called 4<sup>th</sup> boy and told him to work on every 4<sup>th</sup> locker and so on. At the end, how many lockers will remain closed.

- (a) 9 (b) 10  
(c) 90 (d) 91
99. A man bought two machines for his factory. After some time he decided to sell them each for 600 Rs. Making a loss of 20% on one of them and a profit of 20% on the other. How did the transaction affected him?
- (a) + 50 Rs. (b) -50 Rs.  
(c) 0 Rs. (d) Can't Say
100. Fifty minutes ago if it was four times as many minutes past three O'clock, how many minutes is it to six O'clock?
- (a) 26 min. (b) 34 min.  
(c) 44 min. (d) 50 min.

