

Talent Search Exam. 2013

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 **10 pages**.
2. The question paper contains blank space 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

- A B C D Tick mark
- A B C D Cross mark
- A 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)

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.

.....

(Signature of the Invigilator)

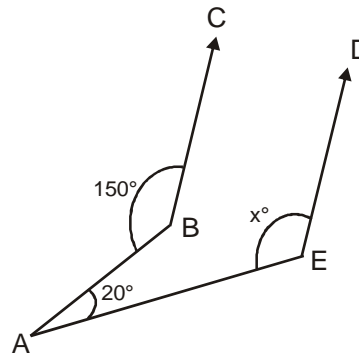
PART-I (MATHEMATICS)

Choose the correct answer :

1. Simplify : $(-12) \times (-3) \times (+4) \times (-6)$
 (A) -144 (B) -908
 (C) 864 (D) -864
2. If $a - b = 2$, then $a^2 + 2b - 4$ in terms of b is
 (A) $b^2 - 6b + 4$ (B) $b^2 + 4b$
 (C) $b^2 + 6b$ (D) $b^2 + 6b - 4$
3. The CP of 25 articles is equal to the SP of 20 articles. The gain percentage is
 (A) 25% (B) 20%
 (C) 30% (D) 50%
4. The HCF $(x + y)^2$, $(x^2 - y^2)$ and $(x^2 - y^2)^2$ is
 (A) $x - y$ (B) $x^2 - y^2$
 (C) $x + y$ (D) $(x + y)^2$
5. The average of a set of 67 observations is 35. If each of the 67 observations is divided by 4, the average value of the set is
 (A) 8.75 (B) 8.70
 (C) 7.75 (D) 7.70
6. $(8x^3 \div 27a^{-3})^{2/3} =$
 (A) x^2a^2 (B) $\frac{4}{9}x^2a^2$
 (C) $\frac{4}{3}x^2a^2$ (D) $\frac{64}{729}xa$
7. If 6 times the complement of an angle is 12° less than twice its supplement, then angle is
 (A) 42° (B) 48°
 (C) 24° (D) 114°
8. Choose the false statement.
 (A) A cuboid has 3 pairs of opposite faces
 (B) The number of vertices of a cube is 6
 (C) All sides of a square are equal
 (D) Cuboid is a 3 dimensional figure
9. If in a $\triangle ABC$, $\angle A = 60^\circ$ and $AB = AC$, then $\triangle ABC$ is
 (A) An isosceles \triangle
 (B) An equilateral \triangle
 (C) A right angled triangle
 (D) An isosceles right \triangle
10. If $\frac{5}{7}$ of $49 + 20\%$ of $130 = x + 49$, then $x = ?$
 (A) 10 (B) 12
 (C) 16 (D) 18
11. Ratio of 350 g and 3 kg is
 (A) 116 : 1 (B) 60 : 7
 (C) 7 : 60 (D) None of these
12. Find the SI on Rs. 1800 from 21st Feb, 2003 to 12th April 2003 at 7.3% rate of interest per annum.
 (A) Rs. 18.25 (B) Rs. 18.00
 (C) Rs. 18.50 (D) Rs. 18.75
13. The area of a triangular field is 1.5 hectares. If its altitude is 300 m, find the corresponding base.
 (A) 100 m (B) 10 m
 (C) 120 m (D) None of these
14. The value of $(4^\circ - 3') \times 6^2$ is
 (A) 0 (B) -36
 (C) -72 (D) None of these
15. If $\frac{x}{y} = \frac{6}{5}$ then $\frac{x^2 + y^2}{x^2 - y^2}$ is:
 (A) $\frac{36}{25}$ (B) $\frac{25}{36}$

Space for rough work

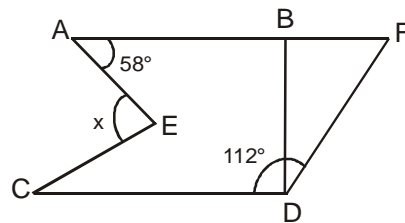
- (C) $\frac{61}{11}$ (D) $\frac{11}{61}$
16. A work can be done in 6 days by 2 men and 3 boys. 11 men and 25 boys do the same work in 1 day. Compare the work of a boy with that of man:
- (A) 3 : 7
(B) 1 : 7
(C) 5 : 4
(D) 4 : 5
17. When $m + \frac{1}{m} = 3$, find the value of $m^2 + \frac{1}{m^2}$
- (A) 7 (B) 9
(C) 3 (D) 11
18. Find a positive number which exceeds 65 times its reciprocal by 64:
- (A) 65
(B) 64
(C) 63
(D) 62
19. Coconut oil is now being sold at Rs 27 per kg. During last month its cost was Rs 24 per kg. Find by how much percentage a family should reduce its consumption, so as to keep the expenditure the same:
- (A) $11\frac{1}{9}\%$
(B) 12%
(C) $11\frac{6}{9}\%$
(D) 9%
20. From the given Fig., $BC \parallel ED$ find the value of x :



- (A) 130° (B) 135°
(C) 140° (D) 145°
21. The perimeter of a Δ is:
- (A) Greater than the sum of its altitudes
(B) Less than the sum of its altitudes
(C) Equal to the sum of its altitudes
(D) None of these
22. The difference between the greatest and the least number of $\frac{5}{9}, \frac{1}{9}, \frac{11}{9}$ is:
- (A) $\frac{2}{9}$ (B) $\frac{4}{9}$
(C) $\frac{10}{9}$ (D) $\frac{2}{3}$
23. If $2\frac{1}{2}\%$ of a number is 0.2, then what will be 120% of its:
- (A) 10.8 (B) 9.6
(C) 4.8 (D) None of these
24. The difference between circumference and radius of a circle is 37 m. The circumference of that circle is:

Space for rough work

- (A) 7 m (B) 154 m
(C) 44 m (D) None of these
25. The degree of $3x^2y^4z^6$ is
(A) 2 (B) 12
(C) 4 (D) 6
26. Instrument used to construct or measure angles is:
(A) Compass
(B) Scale
(C) Set square
(D) Protractor
27. What percent of 270 m is 108 m?
(A) 36% (B) 30%
(C) 40% (D) 25%
28. Arrange in descending order $-2, \frac{-4}{5}, \frac{11}{-20}, \frac{3}{4}$
(A) $\frac{3}{4} > -2 > \frac{-11}{20} > \frac{4}{-5}$
(B) $\frac{3}{4} > \frac{4}{-5} > -2 > \frac{-11}{20}$
(C) $\frac{3}{4} > \frac{-11}{20} > \frac{4}{-5} > -2$
(D) $\frac{3}{4} > \frac{4}{-5} > \frac{-11}{20} > -2$
29. The diagonals of a rectangle ABCD cut at K. If $\angle AKB = 110^\circ$, then $\angle ACB$ and $\angle ACD$ equal to:
(A) $55^\circ, 45^\circ$ (B) $45^\circ, 55^\circ$
(C) $55^\circ, 35^\circ$ (D) $35^\circ, 55^\circ$
30. The incentre of a Δ is equidistant from its
(A) Sides
(B) Vertices
(C) Both (A) and (B)
- (D) None of these
31. $m : 32 :: 4 : 16$, value of m is:
(A) 16 (B) 8
(C) 4 (D) 2
32. If $\frac{-3}{x} = \frac{x}{27}$, then x is:
(A) A rational number
(B) An integer
(C) Not a rational number
(D) A natural number
33. If ABCD is a parallelogram, then the ratio of the areas of parallelogram ABCD and ΔABC is:
(A) 1 : 2
(B) Cannot be determined
(C) 2 : 1
(D) None of these
34. AF \parallel CD and CE \parallel DF, find $\angle x$.



- (A) 116° (B) 126°
(C) 139° (D) 140°
35. If 20% of 60% of a number is 144, then the number is:
(A) 1200
(B) 8640
(C) 2880
(D) None of these

Space for rough work

PART-II (SCIENCE)

36. Which of the following pairs is correctly matched?

- (A) Spinach-Stem
- (B) Carrot-Roots
- (C) Cauliflower-Roots
- (D) Onion-Flowers

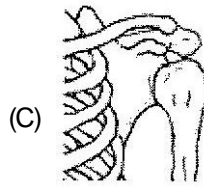
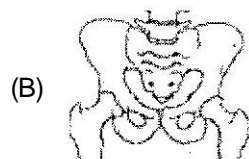
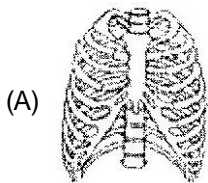
37. Which of the following is the longest tooth?

- (A) Incisor
- (B) Premolar
- (C) Canine
- (D) Molar

38. During digestion in human, _____(1)_____ breaks down fats, _____(2)_____ breaks down proteins into peptides, which are further broken down into amino acids by _____(3)_____, and _____(4)_____ breaks down starch into sugar. Select the option that gives the correct fillers for the above blanks.

- (A) 1-liver, 2-pancreas, 3-intestinal gland, 4-salivary gland
- (B) 1-pancreas, 2-liver, 3-intestinal gland, 4-salivary gland
- (C) 1-salivary gland, 2-liver, 3-intestinal gland, 4-pancreas
- (D) 1-intestinal gland, 2-pancreas, 3-liver, 4-salivary gland

39. Which of the following protects our heart and kidney?



40. A hormone with a seat of activity in the liver (converting glucose into glycogen) is produced by

- (A) Pancreas
- (B) Pituitary
- (C) Parathyroid
- (D) Thymus

41. Which of the following is the most common respiratory substrate?

- (A) Glucose
- (B) Sucrose
- (C) Maltose
- (D) Glycogen

42. The process of breakdown of carbohydrates to produce CO_2 , water and energy is called

- (A) Photosynthesis
- (B) Osmosis
- (C) Nutrition
- (D) Respiration

43. What is/are the main function(s) of the small intestine in the human body?

- (A) Only digestion
- (B) Only absorption
- (C) Only assimilation
- (D) Both (A) and (B)

44. Which of the following vitamins is synthesized inside the human body when exposed to sunlight?

- (A) Vitamin A
- (B) Vitamin B
- (C) Vitamin C
- (D) Vitamin D

45. From which part of a plant does the maximum loss of water through transpiration take place?

- (A) Lenticles
- (B) Cuticle
- (C) Stomata
- (D) Rhizoids

Space for rough work

46. Which of the following tissues help in transportation in plants?
 (A) Conducting tissues
 (B) Connective tissues
 (C) Meristematic tissues
 (D) Simple permanent tissues
47. Which of the following causes plasmolysis?
 (A) Exosmosis (B) Endosmosis
 (C) Absorption (D) Adsorption
48. Which of the following is the largest living cell?
 (A) Ostrich egg (B) Bacterial cell
 (C) Nerve cell (D) White blood cells
49. Which of the following organisms is not unicellular?
 (A) Amoeba (B) Fungus
 (C) Bacteria (D) Paramecium
50. In which period of the year, kharif crops are cultivated?
 (A) June to November (B) November to April
 (C) November to March (D) June to September
51. Which of the following is a water borne disease?
 (A) Tuberculosis (B) Measles
 (C) Typhoid (D) Chicken pox
52. Which of the following diseases is a communicable disease?
 (A) Diabetes (B) Hypertension
 (C) Kwashiorkor (D) Tuberculosis
53. Which acid is present in tomato?
 (A) Acetic acid (B) Citric acid
 (C) Oxalic acid (D) Abscisic acid
54. Oxidation is the process which involve
 (A) Addition of electron (B) Addition of hydrogen
 (C) Removal of electron (D) Removal of oxygen
55. Which of the following plastic is used for non stick coating on cookware?
 (A) Melamine (B) Teflon
 (C) Bakelite (D) Nylon
56. In which of the following solution phenolphthalein indicator will give a pink colour?
 (A) CH_3COOH (B) H_2CO_3
 (C) HNO_3 (D) $\text{Ca}(\text{OH})_2$
57. Which of the following is a weak acid?
 (A) Sulphuric acid (B) Nitric acid
 (C) Acetic acid (D) Hydrochloric acid
58. Which of the following is correctly matched?
 I. Caustic soda - Sodium thiosulphate
 II. Lime - Sodium hydroxide
 III. Washing soda - Sodium carbonate
 IV. Baking soda - Sodium bicarbonate
 (A) I, II and III (B) III and IV
 (C) II and III (D) I and II
59. Which of the following element is not a constituent of nylon?
 (A) Carbon (B) Sulphur
 (C) Oxygen (D) Nitrogen
60. Match the correct pairs.
 I. Tamrind - Citric acid
 II. Lemon - Tartaric acid
 III. Ant sting - Methanoic acid
 IV. Vinegar - Acetic acid
 (A) I and III (B) II and III
 (C) III and IV (D) I and IV
61. Aqua regia is
 (A) HCl and HNO_3 in 1 : 3
 (B) HCl and HNO_3 in 3 : 1
 (C) HCl and H_2SO_4 in 1 : 3
 (D) HCl and H_2SO_4 in 3 : 1

Space for rough work

62. Rayon yarns are obtained from
 (A) Polymethylene (B) Polyesters
 (C) Cellulose (D) Polyamide
63. Which of the following is known as dry ice?
 (A) Solid H_2O (B) Solid NO_2
 (C) Solid CO_2 (D) Solid N_2
64. Which of the following is monoatomic element?
 (A) Oxygen (B) Nitrogen
 (C) Sulphur (D) Carbon
65. Which of the following represents isobars?
 (A) ${}_bX^a{}_{b+1}Y^a$ (B) ${}_bX^a{}_bX^c$
 (C) ${}_bX^a{}_{b-1}Y^{a+2}$ (D) ${}_bX^a{}_bY^{a+1}$
66. Which of the following is a compound?
 (A) Milk (B) Air
 (C) Soda water (D) Water
67. Atomic number of an element is 11 and mass number of that element is 23. How many neutrons are present in the atom?
 (A) 11 (B) 12
 (C) 22 (D) 23
68. Which process is responsible for cooling of water kept in earthen pitcher during summer days?
 (A) Condensation (B) Evaporation
 (C) Freezing (D) Cooling
69. Name the gas used in bags of "Uncle Chips".
 (A) Oxygen (B) Nitrogen
 (C) Hydrogen (D) Air
70. What is the chemical formula of sugar?
 (A) $C_6H_{12}O_6$ (B) $C_{12}H_{22}O_{11}$
 (C) $C_{12}H_{24}O_{12}$ (D) $C_{10}H_{22}$
71. Which of the following is not a chemical change?
 (A) Rusting of iron
 (B) Dissolution of sugar in water
 (C) Digestion of food in our body
 (D) Respiration
72. An element having electronic configuration 2, 8, 7 is
 (A) Phosphorus (B) Chlorine
 (C) Potassium (D) Sulphur
73. The energy come from sun to earth by the process.
 (A) Conduction (B) Convection
 (C) Radiation (D) Induction
74. In the space (gravity free) the water will be heated by the process
 (A) Conduction (B) Convection
 (C) Radiation (D) Induction
75. A wooden spoon is dipped in a cup of ice cream. Its other end
 (A) Becomes cold by the process of conduction
 (B) Becomes cold by the process of convection
 (C) Becomes cold by the process of radiation
 (D) Does not become cold
76. There are two station A and B distance between them is 1000 km. The two identical trains T_A and T_B are allowed to move to each other. $V_A = 500$ km/hr, $V_B = 250$ km/hr. Which one will be nearer from A, when they cross to each other, after starting at the same time
 (A) T_A (B) T_B
 (C) Both T_A and T_B (D) Data is insufficient
77. The rate of change of displacement is
 (A) Speed (B) Velocity
 (C) Acceleration (D) Retardation
78. Choose the circular path
 (A) Motion of a child in a merry ground
 (B) Motion of your hands while running
 (C) Motion of hammer of an electric bell

Space for rough work

- (D) Motion of a child on a sea-saw
79. What can be negative : speed or velocity?
 (A) Speed (B) Velocity
 (C) Both (1) & (2) (D) None of these
80. Virtual image larger than the object can be produced by
 (A) Concave lens (B) Concave mirror
 (C) Convex mirror (D) Plane mirror
81. Which type of lens forms always virtual image?
 (A) Concave lens (B) Convex lens
 (C) Plano-convex lens (D) Concavo-convex lens
82. The rear view mirror of a car is a plane mirror. A driver is reversing his car at a speed of 2 meter/sec. The driver sees in his rear view mirror the image of a truck parked behind his car. The speed at which the image of the truck appears to approach the driver will be
 (A) 1 meter/sec (B) 2 meter/sec
 (C) 4 meter/sec (D) 8 meter/sec
83. Choose the correct statement-
 (A) In winter the wind flow from the land to the ocean
 (B) In summer the winds flow from the land toward the ocean
 (C) A cyclone is formed by a very high pressure system with very high-speed winds revolving around it
 (D) The coast line of India is not vulnerable to cyclones
84. A simple pendulum takes 32 sec. to complete 20 oscillations. What is the time period of the pendulum?
 (A) 1.8 sec. (B) 1.6 sec.
 (C) 1.4 sec. (D) 1.2 sec.
85. A car moves with a speed of 40 km/h for 15 min. and then with a speed of 60 km/h for the next 15 min., the total distance covered by the car is
 (A) 100 km (B) 25 km
 (C) 15 km (D) 10 km

PART-III (REASONING)

86. A fruit seller had some apples. He sells 40% apples and still has 420 apples. Originally, he had:
 (A) 588 apples (B) 600 apples
 (C) 672 apples (D) 700 apples
87. If 20% of $a = b$, then $b\%$ of 20 is the same as:
 (A) 4% of a (B) 5% of a
 (C) 20% of a (D) None of these
88. Look at this series: 14, 28, 20, 40, 32, 64, ... What number should come next?
 (A) 52 (B) 56
 (C) 96 (D) 128
89. A clock is started at noon. By 10 minutes past 5, the hour hand has turned through:
 (A) 145° (B) 150°
 (C) 155° (D) 160°
90. How many times do the hands of a clock coincide in a day?
 (A) 20 (B) 21
 (C) 22 (D) 24
91. Vincent has a paper route. Each morning, he delivers 37 newspapers to customers in his neighborhood. It takes Vincent 50 minutes to deliver all the papers. If Vincent is sick or has other plans, his friend Thomas, who lives on the

Space for rough work

same street, will sometimes deliver the papers for him.

- (A) Vincent and Thomas live in the same neighborhood
- (B) It takes Thomas more than 50 minutes to deliver the papers
- (C) It is dark outside when Vincent begins his deliveries
- (D) Thomas would like to have his own paper route
92. Tim's commute never bothered him because there were always seats available on the train and he was able to spend his 40 minutes comfortably reading the newspaper or catching up on paperwork. Ever since the train schedule changed, the train has been extremely crowded, and by the time the doors open at his station, there isn't a seat to be found.
- (A) Tim would be better off taking the bus to work
- (B) Tim's commute is less comfortable since the train schedule changed
- (C) Many commuters will complain about the new train schedule
- (D) Tim will likely look for a new job closer to home
93. On weekends, Mr. Sanchez spends many hours working in his vegetable and flower gardens. Mrs. Sanchez spends her free time reading and listening to classical music. Both Mr. Sanchez and Mrs. Sanchez like to cook.
- (A) Mr. Sanchez enjoys planting and growing vegetables
- (B) Mr. Sanchez does not like classical music
- (C) Mrs. Sanchez cooks the vegetables that Mr. Sanchez grows
- (D) Mrs. Sanchez enjoys reading nineteenth century novels

Direction for questions (94 to 96)

In each question below is given a statement followed by two conclusions numbered I and II. You have to assume everything in the statement to be true, then consider the two conclusions together and decide which of them logically follows beyond a reasonable doubt from the information given in the statement.

94. **Statements:** In a one day cricket match, the total runs made by a team were 200. Out of these 160 runs were made by spinners.
- Conclusions:**
- I. 80% of the team consists of spinners.
- II. The opening batsmen were spinners.
- (A) Only conclusion I follows
- (B) Only conclusion II follows
- (C) Either I or II follows
- (D) Neither I nor II follows
95. **Statements:** The old order changed yielding place to new.
- Conclusions:**
- I. Change is the law of nature.
- II. Discard old ideas because they are old.
- (A) Only conclusion I follows
- (B) Only conclusion II follows
- (C) Either I or II follows
- (D) Neither I nor II follows
96. **Statements:** Population increase coupled with depleting resources is going to be the scenario of many developing countries in days to come.
- Conclusions:**
- I. The population of developing countries will not continue to increase in future.
- II. It will be very difficult for the governments of developing countries to provide its people decent quality of life.

Space for rough work

- (A) Only conclusion I follows
- (B) Only conclusion II follows
- (C) Either I or II follows
- (D) Neither I nor II follows

Direction for question No. 97

In these series, you will be looking at both the letter pattern and the number pattern. Fill the blank in the middle of the series or end of the series.

97. SCD, TEF, UGH, _____, WKL
- (A) CMN
 - (B) UJI
 - (C) VIJ
 - (D) IJT
98. Shyama says that father of Rajiv's father is my father. How is Shyama related to Rajiv?
- (A) Sister

- (B) Mother
- (C) Bua (Father's sister)
- (D) Niece

99. Introducing a man, a woman said, he is the only son of my mother's mother. How is the woman related to that man?

- (A) Mother
- (B) Cousin
- (C) Niece
- (D) Aunt

100. Poonam said to her friend, "Yesterday I attended the birthday party of the son of the only son-in-law of my mother's mother". How is Poonam related to the man, whose birthday party she attended?

- (A) Niece
- (B) Daughter
- (C) Sister
- (D) Mother



Space for rough work