

SAMPLE PAPER

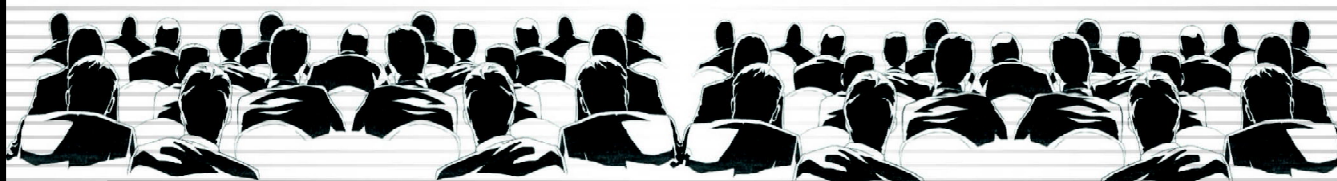
**'AVIRAL'  
TALENT  
SEARCH EXAM**

**2018**

AVIRAL  
talent search  
EXAM-2018

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*Talent*



**AVIRAL TALENT SEARCH EXAM**

**ATSE - JUNIOR - 2018**

**Science, Mathematics & Mental Ability**

**For Class - VII Studying Students**

**Time : 2 Hr.**

**M. M. : 320**

Roll No :

Date :

Name of Student : \_\_\_\_\_

Father's Name : \_\_\_\_\_

Name of School : \_\_\_\_\_



**AVIRAL CLASSES**

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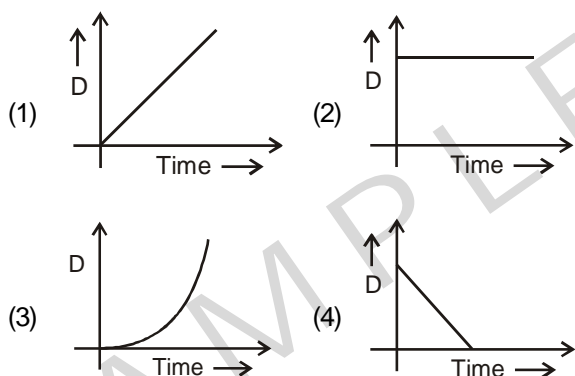
## INSTRUCTIONS

1. This question paper contains 80 Questions and Total Max. Marks is 320. Attempt all questions.
2. This question paper contains three Section namely, **Section-1** : Science (Physics, Chemistry & Biology), **Section-2** : Mathematics and **Section-3** : Mental Ability.
3. **Section-1** has 45 questions (15 each from Physics, Chemistry & Biology). **Section-2** has 20 questions and **Section-3** has 15 questions.
4. For each correct answer 4 marks will be awarded and for wrong answer 1 mark will be deducted. No marks will be given for unattempted question.
5. Use only **blue/black pen (avoid gel pen)** for darkening the bubble.
6. The Answer sheet will be checked through computer hence, the answer of the question must be marked by shading the circles against the question by dark **blue/black pen**.
7. Write your name and Roll number carefully on the answer sheet as well as the questions paper.

## SECTION - 1 [SCIENCE]

### PHYSICS

1. One microsecond is equal to
  - (1) One billionth of second
  - (2) One millionth of a second
  - (3) One hundredth of a second
  - (4) One tenth of a second
2. The speed of a car is 72 km/hr, then speed in m/sec is
  - (1) 259.2
  - (2) 260.2
  - (3) 20
  - (4) 10.2
3. Which distance-time graphs shows a truck moving with speed which is constant

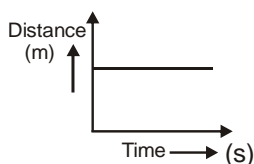


4. Fuse is always connected in series with
  - (1) Neutral wire
  - (2) Live wire
  - (3) Earth wire
  - (4) Any wire
5. Out of the following statement which is true?
  - (1) MCB is a type of fuse
  - (2) Electromagnet's magnetic strength can be increased
  - (3) Short circuiting leads to excessive current
  - (4) All of the above
6. The SI unit of current is
  - (1) Ampere
  - (2) Coulomb per second
  - (3) Both (1) & (2)
  - (4) Volt
7. On decreasing the temperature of water from 4°C to 0°C it
  - (1) Contracts
  - (2) Expands
  - (3) First contracts and then expands
  - (4) No effect
8. Out of the following which is not a green house gas
  - (1) CO<sub>2</sub>
  - (2) Water vapour
  - (3) Methane
  - (4) NO<sub>2</sub>

For Rough Work Only



9. Solid carbon dioxide is called  
(1) Snow (2) Ice  
(3) Dry ice (4) Dry snow
10. The distance time graph for an object is shown in figure. The object is :



- (1) at rest  
(2) is moving with constant speed  
(3) is moving with constant velocity  
(4) is moving with constant acceleration
11. Match the items in column A with Column B

**Column - A**

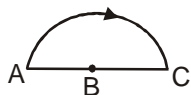
1. Temperature
2. Heat
3. Velocity
4. acceleration

**Column - B**

- a. Joule
- b. kelvin
3.  $\text{m/s}^2$
4.  $\text{m/s}$

The correct match is :

- (1) 1-b, 2-a, 3-c, 4-d  
(2) 1-b, 2-a, 3-d, 4-c  
(3) 1-a, 2-b, 3-c, 4-d  
(4) 1-a, 2-b, 3-d, 4-c
12. The displacement is found to be : [ radius of semi-circle is 5 cm ]



- (1)  $10\pi$  cm (2) 10 cm  
(3) zero (4) none of these
13. The motion of a freely falling body is :  
(1) uniform motion  
(2) non-uniform motion  
(3) uniformly accelerated motion  
(4) none of these
14. Of the materials listed below  
A. water ( tap-water)  
B. pure water  
C. graphite  
D. Mica

a set of materials consisting good conductors of electricity :

- (1) A, B, C (2) A & D  
(3) B, C & D (4) A & C
15. Ram walked from a point A to B 40m due west & then from B to C 30 m due north . The displacement is found to be :  
(1) 30 m (2) 40 m  
(3) 50 m (4) Cannot be determined

**CHEMISTRY**

16. The colour of the pH paper strip turned red when it was dipped into a sample. The sample could be  
(1) Dil.  $\text{NaHCO}_3$  (2) Tap water  
(3) Dil. NaOH (4) Dil. HCl
17. The pH of gastric juices released during digestion is  
(1) less than 7 (2) more than 7  
(3) equal to 7 (4) can't be determined
18. Which of the given equation is an example of skeletal equation :  
(1)  $\text{H}_2 + \text{Cl}_2 \rightarrow 2\text{HCl}$  (2)  $\text{Mg} + \text{O}_2 \rightarrow \text{MgO}$   
(3)  $\text{Zn} + 2\text{HCl} \rightarrow \text{ZnCl}_2 + \text{H}_2$   
(4)  $2\text{AgCl} \rightarrow 2\text{Ag} + \text{Cl}_2$
19. On passage of electric current through acidulated water, the latter gives up  
(1) Hydrogen and Oxygen  
(2) Silver and Chlorine  
(3) Silver and Oxygen  
(4) Acid and water
20. Which of following is not an example of chemical change?  
(1) Ripening of fruits  
(2) Digestion of food  
(3) Chopping of fruits  
(4) Cooking gas
21. Which of the following does not yield wool?  
(1) Camel (2) Woolly dog  
(3) Goat (4) Yak

For Rough Work Only



22. Sorter's disease is caused by  
(1) Anthrax (2) Bacillus  
(3) Microbacterium (4) Vibrio
23. The gas we use in kitchen is called liquefied petroleum gas. In the cylinder it exists as a liquid. When it comes out from the cylinder it becomes a gas (Change-A) then it burns (Change-B). The following statements pertain to these changes. Choose the correct one  
(1) Process-A is a chemical change  
(2) Process-B is a chemical change  
(3) Both processes A and B are chemical change  
(4) None of these is a chemical change
24. This component contributes the highest in global warming  
(1) CFCs (2) CH<sub>4</sub>  
(3) CO<sub>2</sub> (4) NO<sub>x</sub>
25. The number of molecules of water of crystallization present in washing soda crystals is :  
(1) five (2) ten  
(3) seven (4) two
26. Which of the following is not a synthetic fibre  
(1) acrylic (2) nylon  
(3) flax (4) None of these
27. Bee stings can be treated with  
(1) vinegar  
(2) sodium hydrogen carbonate  
(3) potassium hydroxide  
(4) lemon juice
28. The indicator which produce a pink colour in an alkaline solution is  
(1) methyl orange (2) turmeric paper  
(3) phenolphthalein (4) litmus paper
29. Which one is true about the behaviour of MgO in the presence of water ?  
(1) It is basic  
(2) it is acidic  
(3) it is amphoteric  
(4) it is neutral

30. Which of the following are physical changes ?  
(i) melting of iron metal  
(ii) Rusting of iron  
(iii) Bonding of an iron rod  
(iv) Drawing a wire of iron metal  
(1) (i), (ii) and (iii) (2) (i), (ii) and (iv)  
(3) (i), (iii), and (iv) (4) (ii), (iii) and (iv)

### BIOLOGY

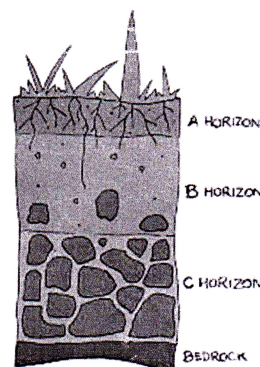
31. The mode of digestion in saprophyte is  
(1) intracellular  
(2) extra cellular  
(3) feed on dead & decay matters  
(4) feed on host
32. The food passess from stomach to intestine in the form of  
(1) Bolus (2) Chyme  
(3) Chyle (4) Chye
33. Parotid gland secretes  
(1) Bile juice  
(2) Gastric juice  
(3) Saliva  
(4) Mucus
34. In soil profile 'B' horizon is characterised by  
(1) Lesser amount of humus and more amount of minerals  
(2) More amount of humus and lesser amount of minerals  
(3) Small lumps of rocks with cracks and crevices  
(4) (2) and (3) both
35. Which are the most important characteristics of 'A' horizon  
(1) Dark in colour & compact  
(2) Dark in colour and rich in humus  
(3) Light in colour and rich in minerals  
(4) Dark in colour, rich in humus and minerals

For Rough Work Only



36. Which of the following is not a character of star fish digestion
- (1) Digestion is intracellular
  - (2) Digestion is extra cellular
  - (3) The stomach can pops out through its mouth
  - (4) Food is not ingested by mouth
37. Which of the following is not correct about artery
- (1) Thin walled with valves
  - (2) Thick walled without valves
  - (3) Blood flows smoothly
  - (4) Superficially situated
38. What is true about blood cells
- (1) WBCs transport  $O_2$
  - (2) RBCs play important role in immunity
  - (3) Blood clot takes place with the help of blood platelets
  - (4) Plasma is not a part of blood
39. The mode of nutrition in mistletoe is
- (1) Autotrophic
  - (2) Parasite
  - (3) Saprophytic
  - (4) Commensalism
40. Total oxidation of 1 glucose molecules during aerobic respiration produces
- (1) 38 ATP molecules
  - (2) 30 ATP molecules
  - (3) 36 ATP molecules
  - (4) 32 ATP molecules

41. By considering the number of permanent teeth in each jaw, pick the correct option
- (1) Incisors - 4 ,canines -2,Premolars - 4 molars - 6
  - (2) Incisors - 4 ,canines -2,Premolars - 6 molars - 4
  - (3) Incisors - 4 ,canines -4,Premolars - 2 molars - 6
  - (4) Incisors - 6 ,canines -4,Premolars - 2 molars - 4
42. Blood that returns to the lungs from the body is
- (1) Oxygenated
  - (2) Deoxygenated
  - (3) Mixed
  - (4) None
43. The topsoil best suited for growing plants is
- (1) sandy soil
  - (2) Clayey soil
  - (3) Loamy soil
  - (4) None of these
44. Recognise the soil horizon from the diagram contains humus



- (1) A - horizon
  - (2) B-Horizon
  - (3) C- horizon
  - (4) Bedrock0
45. The opening and closing of stomata is due to
- (1) pressue of gases inside the leaves
  - (2) changes of turgor pressure in guard cells
  - (3) Effect of hormones
  - (4) Their genetic constitution

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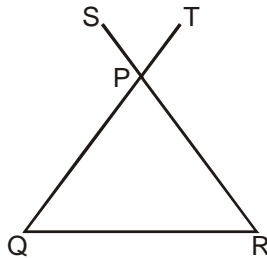
## SECTION - 2 [MATHEMATICS]

46. If ₹ 1000 is divided between A and B in the ratio 3 : 2 then A will receive  
 (1) ₹ 400 (2) ₹ 500  
 (3) ₹ 600 (4) ₹ 800
47.  $2 \div \frac{3}{17}$  of  $\left(2\frac{3}{4} + 3\frac{5}{8}\right) + \frac{2}{5} \div 2\frac{1}{5} + \frac{2}{9} = ?$   
 (1)  $\frac{23}{11}$  (2)  $\frac{17}{41}$   
 (3)  $\frac{89}{85}$  (4)  $\frac{24}{11}$
48. The highest score in an innings was  $\frac{2}{9}$  of the total and the next lower was  $\frac{2}{9}$  of the remainder. These two scores differ by 8 runs. The total score of the innings will be  
 (1) 126 (2) 192  
 (3) 162 (4) 184
49. Two angles forming a linear pair are  
 (1) adjacent angles  
 (2) complementary angles  
 (3) adjacent and complementary angles  
 (4) adjacent and supplementary angles
50. If A and B are in the ratio 3 : 4 and B and C are in the ratio 12 : 13, then A and C will be in the ratio  
 (1) 3 : 13 (2) 9 : 13  
 (3) 36 : 13 (4) 13 : 9
51. In a class of 48 students, the number of girls is three-fifths the number of boys. Determine the number of boys in the class  
 (1) 40 (2) 50  
 (3) 30 (4) 60
52. The solution of the equation  $x - 1 = 2(x - 2)$  is  
 (1)  $x = 0$  (2)  $x = 1$   
 (3)  $x = 3$  (4)  $x = -2$
53. The solution of which of the following equations is neither a fraction nor an integer?  
 (1)  $2x + 6 = 0$   
 (2)  $3x - 5 = 0$   
 (3)  $5x - 8 = x + 4$   
 (4)  $4x + 7 = x + 2$
54. If we write all natural numbers from 1 to 100, what fraction of them are composite numbers?  
 (1)  $\frac{1}{100}$  (2)  $\frac{1}{4}$   
 (3)  $\frac{3}{4}$  (4)  $\frac{37}{50}$
55. The number which when decreased by 12% becomes 1760 is  
 (1) 1000 (2) 4000  
 (3) 2000 (4) 3500
56.  $5\frac{1}{8}$  of  $208 + 786 = 2000 - ?$   
 (1) 112 (2) 148  
 (3) 184 (4) 124
57. One-seventh of a number is 51. What will be 64% of that number?  
 (1) 248.12 (2) 208.48  
 (3) 238.24 (4) 228.48
58. If  $x$  and  $y$  are the smallest and the greatest four digit numbers formed by using 1, 3, 5 and 9, then find  $y - x$   
 (1) 5940 (2) 8172  
 (3) 3600 (4) 6336
59. Ram went to a shop to purchase an article. But he had an amount which is equal to  $\frac{13}{27}$  of the cost price of the article. If the cost of the article was ₹ 540, then find the amount with him  
 (1) ₹ 240 (2) ₹ 250  
 (3) ₹ 260 (4) ₹ 270

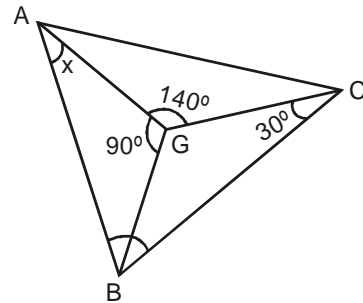
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60. For what value of P is  $(9x^2 + 18xy + P)$  a perfect square  
 (1)  $9y^2$  (2)  $3y$   
 (3)  $6y^2$  (4)  $4y^2$
61.  $55\%$  of 160 +  $24\%$  of 50 -  $36\%$  of 150  
 (1) 26 (2) 40  
 (3) 64 (4) 46
62. If angles x and y form a linear pair and  $2x - 3y = 35^\circ$ , then the values of y and x respectively are  
 (1)  $110^\circ, 70^\circ$  (2)  $65^\circ, 115^\circ$   
 (3)  $115^\circ, 65^\circ$  (4)  $70^\circ, 110^\circ$
63. In the figure  $\angle SPT = 60^\circ$  and  $PQ = PR$ . Find  $\angle PQR$



- (1)  $50^\circ$  (2)  $45^\circ$   
 (3)  $60^\circ$  (4)  $55^\circ$
64. In figure  $\angle ABC = 60^\circ$ , find x



- (1)  $40^\circ$  (2)  $120^\circ$   
 (3)  $70^\circ$  (4)  $50^\circ$
65. The lengths of two sides of an isosceles  $\Delta$  are 5 cm and 12 cm. The length of the third side is  
 (1) 12 cm (2) 5 cm  
 (3) 17 cm (4) none of these

### SECTION - 3 [MENTAL ABILITY]

66. If 'M' denotes 'x', 'R' denotes '-', 'K' denotes '+' and 'B' denotes ' $\div$ ', then  $24 B 4 M 8 K 6 R 4 = ?$   
 (1)  $-3\frac{4}{7}$  (2)  $-3\frac{1}{4}$   
 (3) 52 (4) 50
67. Choose the odd pair out  
 (1) Waiter - field (2) Pilot - Cockpit  
 (3) Lawyer - court (4) Sailor - ship
68. Which one does not belong to the group?  
 (1) Sweet (2) Cold  
 (3) Sour (4) Bitter
69. Choose the correct figure from A, B, C, D in place of question mark



- (1) (2)   
 (3) (4)   
 70. 'Cub' is related to 'Tiger' in the same way as 'Kitten' is related to  
 (1) Dog (2) Cat  
 (3) Duck (4) None of these

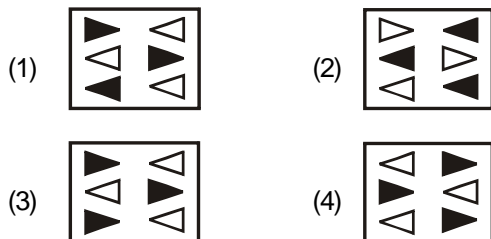
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71. Choose the correct water image of the given figure (X)



(X)



72. If 'x' means '+', '+' means  $\div$ , ' $\div$ ' means '-' and '-' means 'x', what will be the value of the following expression ?

$$5 - 7 \times 9 + 3 \div 2 = ?$$

- (1) 36 (2) 315  
(3) 48 (4) 44

73. What will be the next number in the series?

1, 3, 2, 6, 3, 9, 4, ?

- (1) 5 (2) 10  
(3) 15 (4) 12

74. Rohan walked 50 m towards East, took a right turn and walked 30 m. Which direction is he now from his starting position ?

- (1) South-West (2) North-East  
(3) North-West (4) South-East

75. Which one does not belong to the group?

- (1) January (2) March  
(3) June (4) July

76. 'FIFA' is related to 'Football' in the same way as 'ICC' is related to

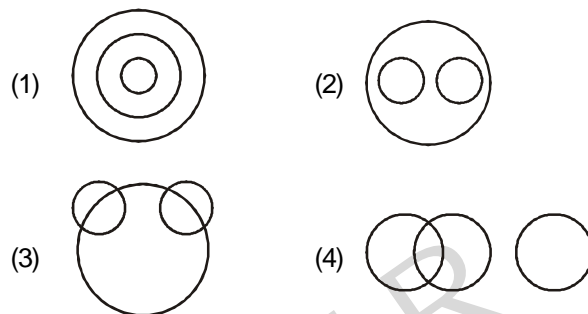
- (1) Chess (2) Hockey  
(3) Cricket (4) Volleyball

77. Choose the missing letter(s) to form a series.

AB, DEF, HIJK, ?, STUVWX

- (1) LMNO (2) LMNOP  
(3) MNOPQ (4) QRSTU

78. Which of the following diagrams indicates the best relation between Disease, Jaundice, Fever?



79. Mamta walked 5m towards East, took a right turn and walked 10 m and again he took a right turn and walked 15 m which direction is she facing now?

- (1) South (2) West  
(3) North (4) South-West

80. If the letters of the word 'EDUCATION' are arranged alphabetically, then which letter will come exactly in the middle

- (1) E (2) N  
(3) A (4) I

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## ANSWER KEY

### SECTION-1 SCIENCE

#### PHYSICS

1. (2)
2. (3)
3. (1)
4. (2)
5. (4)
6. (3)
7. (2)
8. (4)
9. (3)
10. (2)
11. (2)
12. (2)
13. (3)
14. (4)
15. (3)

#### CHEMISTRY

16. (4)
17. (1)
18. (2)
19. (1)
20. (3)
21. (2)
22. (1)
23. (3)
24. (3)
25. (3)
26. (3)
27. (2)
28. (3)
29. (1)
30. (3)

#### BIOLOGY

31. (2)
32. (2)
33. (3)
34. (1)
35. (2)
36. (1)
37. (2)
38. (3)
39. (2)
40. (1)
41. (1)
42. (2)
43. (3)
44. (1)
45. (2)

### SECTION-2 MATHEMATICS

46. (3)
47. (4)
48. (3)
49. (4)
50. (2)
51. (3)
52. (3)
53. (3)
54. (3)
55. (3)
56. (2)
57. (4)
58. (2)
59. (3)
60. (1)
61. (4)
62. (2)
63. (3)
64. (4)
65. (1)

### SECTION-3 MENTAL ABILITY

66. (4)
67. (1)
68. (2)
69. (1)
70. (2)
71. (3)
72. (1)
73. (4)
74. (4)
75. (3)
76. (3)
77. (3)
78. (2)
79. (2)
80. (4)