# ALL INDIA TALENT SEARCH EXAMINATION <br> 2019 

## Class

## Time Allowed: 90 Minutes

This Test Booklet contains 12 pages. Do not open the Test Booklet until you are asked to do so. Important instructions

1. The Answer Sheet is inside this Test Booklet. When you are directed to open the Test Booklet, take out the Answer Sheet and fill in the particulars carefully with blue/black ball point pen only.
2. This question paper contains 70 multiple choice questions each of one mark. The question paper is divided into two sections, Section A and Section B
3. Section A is Scholastic Aptitude Test (SAT), contains 40 questions. This section covers Physics, Chemistry, Biology \& Mathematics.
4. Section B is Mental Ability Test (MAT), Computer Awareness and General Knowledge, contains 30 questions.
5. Each question should be answered by darkening the appropriate circles $(A, B, C$ or $D)$ with a blue or black ball pen.
6. All questions are compulsory. There will be no negative marks for wrong answer.
7. Answer recorded once in the answer sheet cannot be altered.
8. All rough works should be done only in the space provided for rough work in this question paper.
9. Calculator is not permitted in the examination hall.
10. Candidate should write his / her name in the space provided for the purpose.

Candidate's Name:
Roll Number :


## SECTION A

## GENERAL SCIENCE (Question No 1 to 25)

1 The process of taking in and utilizing food for growth and development is known as
[A] Ingestion
[B] Nutrition
[C] Digestion
[D] All of these

2 Starch is a kind of
[A] Carbohydrate
[B] Fat
[C] Protein
[D] Vitamin

3 The following figure shows a human skull. Identify the type of joints at $\mathrm{X}, \mathrm{Y}$ \& Z .


|  | $\mathbf{X}$ | $\mathbf{Y}$ | $\mathbf{Z}$ |
| :--- | :---: | :---: | :---: |
| $[\mathrm{A}]$ | Fixed | Hinge | Pivot |
| $[\mathrm{B}]$ | Fixed | Hinge | Ball \& socket |
| $[\mathrm{C}]$ | Pivot | Pivot | Fixed |
| $[\mathrm{D}]$ | Sliding | Hinge | Fixed |
|  |  |  |  |

4 Which of the following food substances is rich in protein?
[A] Rice
[B] Groundnut
[C] Brinjal
[D] Orange

5 Read the following statement of assertion and statement of reason carefully and select correct option.

Assertion: Some abiotic factors like air, water, light and heat are very important for growth of plants.
Reason: Some of the above abiotic factors are important for all living organisms.
[A] Assertion is true and Reason is false
[B] Assertion is false and Reason is true
[C] Both Assertion and Reason are true and Reason is the correct explanation of Assertion
[D] Both Assertion and Reason are true and Reason is not the correct explanation of Assertion

6 Given below are some animals and their locomotory organs. Find the pair that is NOT matched correctly.
[A] Snakes - Scales
[B] Earthworm - Body segments
[C] Man - Forelimbs
[D] Fish - Fins

7 Carbohydrates can be tested by using
[A] Iodine
[B] Caustic soda
[C] Copper sulphate
[D] Fehling solution

8 Which of the following statements is true?
[A] Bone has a soft substance called bone marrow inside it
[B] The only movable bone in skull is the upper jaw bone
[C] Longest bone in human body is humerus
[D] Floating ribs are not joined to the breastbone
9 Jute is a natural fibre. Which part of the jute plant is used for making jute?
[A] Seed
[B] Stem
[C] Fruit
[D] All of these

## 10 Read the following statement of assertion and statement of reason carefully and select correct option.

Assertion: The process of settling of heavier insoluble particles from a suspension of a substance in water is known as decantation

Reason: This process along with sedimentation is used to get clear water from muddy water.
[A] Assertion is true and Reason is false
[B] Assertion is false and Reason is true
[C] Both Assertion and Reason are true and Reason is the correct explanation of Assertion
[D] Both Assertion and Reason are true and Reason is not the correct explanation of Assertion

11 Which of the following is an example of chemical change?
[A] Filling up a balloon with hot air
[B] Freezing a glass of water in a freezer
[C] A plant collecting sunlight and preparing food
[D] None of the above
12 Hardness of water is due to the presence of
[A] Chlorides and sulphates of calcium and potassium
[B] Bicarbonates, chlorides and sulphates of calcium and magnesium
[C] Bicarbonates and chlorides of potassium and magnesium
[D] Bicarbonates, chlorides and sulphates of calcium, potassium and magnesium

13 Match the list I with the list II and select the correct option.

| List I |  | List II |  |
| :--- | :--- | :--- | :--- |
| I | Multiple lengthwise yarn in a loom | P | Ginning |
| II | Separation of cotton fibre from its seeds | Q | Warp |
| III | Compression of raw cotton fibres into bundles | R | Spinning |
| IV | Making yarn from fibres | S | Bailing |


|  |  | I | II | III |
| ---: | :---: | :---: | :---: | :---: |
| $[\mathrm{A}]$ | P | Q | R | S |
| $[\mathrm{B}]$ | S | R | Q | P |
| $[\mathrm{C}]$ | R | Q | P | S |
| $[\mathrm{D}]$ | Q | P | S | R |
|  |  |  |  |  |

14 Which of the following are true about acid rain?
(i) Acid rain is very harmful to environment
(ii) Acid rain can harm aquatic organisms
(iii) Acid rain help fisherman to catch more fishes
(iv) Acid rain causes damages to buildings.
[A] (i) \& (ii)
[B] (i) \& (iii)
[C] (i), (ii) \& (iv)
[D] (i), (iii) \& (iv)

15 Which of the following processes enable pure water to be obtained from sea water?
I. Filtration
II. Distillation
III. Evaporation
IV. Reverse osmosis
[A] I \& II only
[B] I \& III only
[C] II \& IV only
[D] III \& IV only

16 The magnetic property of a magnet disappears when it is heated strongly. This is a
[A] Periodic change
[B] Irreversible change
[C] Physical change
[D] Chemical change

17 The motion of the wheel of a car moving at a constant speed is
[A] Translatory \& rotatory
[B] Rotatory
[C] Translatory, rotatory \& periodic
[D] Translatory \& oscillatory

## 18 Read the following statement of assertion and statement of reason carefully and select correct option.

Assertion: There is a high atmospheric pressure in the space
Reason: Astronauts wear special suits
[A] Assertion is true and Reason is false
[B] Assertion is false and Reason is true
[C] Both Assertion and Reason are true and Reason is the correct explanation of Assertion
[D] Both Assertion and Reason are true and Reason is not the correct explanation of Assertion
19 Which part of the electric cell generally acts as positive terminal of the cell?
[A] Metal disc
[B] Metal cap
[C] Either metal cap or metal disc
[D] Cannot say
20 Which of the following statements is incorrect?
[A] The closed path along which electric current flows is called a circuit
[B] The bulb glows only when current flows through the circuit
[C] An electric bulb is said to be fused if there is a break in its filament
[D] Electrical wires are insulated with good conductors of electricity
21 The process of transferring the charge from a charged object to the earth is called
[A] Earthing
[B] Discharging
[C] Transferring
[D] Charging

22 A satellite is orbiting the earth in such a manner that the satellite is always straight above India. It is at a height of 4000 km . Which of the following is true?
[A] Its period of rotation is 24 hours
[B] Its period of revolution is 24 hours
[C] Its period of rotation is 48 hours
[D] Its period of revolution is 360 days
[A] The difference in distance between the initial position and final position of the moving body
[B] The actual length of the path covered by the moving body irrespective of the direction in which the body moves
[C] The actual length of the path covered by the moving body in a straight line.
[D] None of the above

24 The pressure exerted by a column of liquid is independent of the
[A] Density of the liquid
[B] weight of the liquid
[C] Depth of the liquid
[D] Shape of the container

25 Which of these represents one complete oscillation of the pendulum shown below?

[A] PQRQ
[B] PQR
[C] QRQPQ
[D] PQRQPQ

## MATHEMATICS (Question No 26 to 40)

26 Number of arcs made by a chord on a circle is
[A] 1
[B] 2
[C] 3
[D] 4

27 If $2 \boldsymbol{x}$ is an even number, then the next even number is
[A] $2 x-1$
[B] $2 x+1$
[C] $2 x+2$
[D] $2 x-2$

28 The sum of the factors of 49 is
[A] 64
[B] 57
[C] 50
[D] 14

29 Identify the the equation that represents the following statement.
Six less than the total number of students is 27
[A] $x+27=6$
[B] $6-x=27$
[C] $27-6=x$
[D] $x-6=27$

30 A triangle has a perimeter of 50.002 cm . If its two sides are 16.038 cm and 15.32 cm , then its third side is
[A] 18.644 cm
[B] 18.446 cm
[C] 16.844 cm
[D] 19.644 cm

31 The expanded form of 3.02 is
$[\mathrm{A}](3 \mathrm{X} 1)+\left(2+\frac{1}{10}\right)$
[B] $(3 \times 1)+\left(2 X \frac{1}{10}\right)$
$[C](3 X 1)+\left(2 X \frac{1}{100}\right)$
[D] $(3 \times 10)+\left(2 \times \frac{1}{10}\right.$

32 The HCF and LCM of two numbers are 11 and 7700 respectively. If one of the numbers is 275 , then the other number is
[A] 283
[B] 318
[C] 308
[D] 279

33 In the following figure, if $\mathrm{p} \| \mathrm{q}$ and CD is a transversal, then which of the following is true?

$$
\begin{aligned}
& {[\mathrm{A}]<a+<c=180^{\circ}} \\
& {[\mathrm{B}]<d=<e} \\
& {[\mathrm{C}]<d+<e=180^{\circ}} \\
& {[\mathrm{D}]<e=<h}
\end{aligned}
$$



34 A room is 12.5 m long and 8 m wide. A square carpet of side 8 m is laid on its floor. Find the area of the floor which is not carpeted?
[A] $64 \mathrm{~m}^{2}$
[B] $36 \mathrm{~m}^{2}$
[C] $100 \mathrm{~m}^{2}$
[D] $42 \mathrm{~m}^{2}$

35 Hindu-Arabic numeral for MCDXVIII
[A] 1618
[B] 1405
[C] 1418
[D] 1481

36 The sum of money that will produce ₹ 3540 as simple interest in 15 years at $8 \%$ per annum
[A] ₹ 2950
[B] ₹ 3120
[C] ₹ 2800
[D] ₹ 3200

37 An angle which is equal to $360^{\circ}$ is called
[A] Right angle
[B] Acute angle
[C] Linear pair
[D] Complete angle

38 A grasshopper can jump up to 91.4 centimetres in a single jump. If the grasshopper jumped 7.312 metres altogether, how many jumps did it make?
[A] 17 jumps
[B] 8 jumps
[C] 9 jumps
[D] 12 jumps

39 If 20 men take 30 days to complete a job working 12 hours a day. How many hours a day should 10 men wok to complete the job in 20 days?
[A] 20
[B] 24
[C] 25
[D] 27

40 Minute hand and hour hand clock make an acute angle at
[A] 3 O' clock
[B] 5 O' clock
[C] 6 O' clock
[D] 11 O' clock

## SECTION B

41 What is the name of lunar rover which was sent with Chandrayaan 2?
[A] Vikram
[B] Kalam
[C] Jatayu
[D] Pragyan

42 The number of players in each side in Water Polo is
[A] 6
[B] 7
[C] 8
[D] 9

43 Equinox means
[A] Days are larger than nights
[B] Days and nights are equal
[C] Days are shorter than nights
[D] None of these
44 World 'Environment Day' is celebrated every year on:
[A] January 15
[B] July 10
[C] June 5
[D] April 7

45 Kaziranga National Park situated in which one of the following state?
[A] Kerala
[B] Karnataka
[C] Assam
[D] Madhya Pradesh

46 Lord Buddha delivered his first sermon at:
[A] Bodh Gaya
[B] Sanchi
[C] Sarnath
[D] Kushninagar


47 Jupiter takes nearly 12 years to complete one orbit around sun. What would be the age of a 48 years old man if he lives in Jupiter?
[A] 3 Years
[B] 4 Years
[C] 60 Years
[D] 24 Years

48 The Vijayanagar Empire was founded by:
[A] Krishna Devaraya
[B] Harhara and Bukka
[C] Balaji Wiswanath
[D] Chandra Gupta Maurya

49 Which one of the following land form is not related to the formation of flowing water?
[A] Delta
[B] Plateau
[C] Sand bar
[D] Ox bow

50 The term ATM stands for:
[A] Alternate To Money
[B] Automatic Transaction Money
[C] Automatic Teller Machine
[D] Alternative Transaction Money
51 World Aids Day is observed on
[A] December 10
[B] December 1
[C] March 8
[D] June 5

52 Arrange the words in alphabetical order and pick the one that comes second.
[A] Explosion
[B] Emergency
[C] Eager
[D] Ecstasy

53 In a class of some students standing in a straight line, the position of David is 31st from left end and 21 st from right end. How many students are there in the class ?
[A] 52
[B] 55
[C] 50
[D] 51

54 In the following question find out the alternative which will replace the question mark.
Butterfly : caterpillar :: Mole : ?
[A] Cygnet
[B] Hatchling, chick
[C] Calf
[D] Pup

55 Choose the odd pair
[A] Graphite - Pencil lead
[B] Lampblack - Tyre
[C] Diamond - Glass-cutter
[D] Coke - Shoe polish

56 Select a suitable figure from the Answer Figures that would replace the question mark (?).


57 Choose the correct mirror image of the given figure (X) from amongst the four alternatives.


58 Choose the figure which is different from the rest..

[A] 1
[B] 2
[C] 3
[D] 4

59 Replace the question mark


 ?


[A]

[B]

[C]

[D]

60 Look at this series: $21,9,21,11,21,13,21, \ldots$ What number should come next?
[A] 14
[B] 15
[C] 21
[D] 23

61 In a code language QUEEN is written as OVCFL, then KING is written as
[A] IJLH
[B] MKOF
[C] PHIK
[D] FOKM

62 In a code language 35796 is written as 44887 . Find the code of 46823.
[A] 55914
[B] 57194
[C] 55934
[D] 55745

63 MAN: 13114: : WOMEN: ?
[A] 231413514
[B] 13111415
[C] 13152124
[D] 231513514

64 When Anuj saw Manish, he recalled, "He is the son of the father of my daughter." Who is Manish?
[A] Brother-in-law
[B] Brother
[C] Cousin
[D]Uncle

65 Today is Thursday. What will be the day after21 days?
[A] Thursday
[B] Monday
[C] Wednesday
[D] Friday

66 gif, jpg, bmp, png are used as an extension for files which store
[A] Audio data
[B] Image data
[C] Video data
[D] Text data

67 Why is the Caps Lock key referred to as a toggle key?
[A] Because its function goes back and forth every time it is pressed
[B] Because it cannot be used for entering numbers
[C] Because it cannot be used to delete
[D] Because it cannot be used to insert
68 The word "Computer" usually refers to the Central Processing Unit plus:

| [A] Input Devices | [B] External Memory |
| :--- | :---: |
| [C] Internal Memory | [D] Output Device |

69 Which one of the following is not a social media?


The marked button used for?
[A] Line spacing
[B] Increasing font size
[C] Adjusting margin
[D] None of these


## SPACE FOR ROUGH ORK

