



Test Booklet Code

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## NATIONAL TEACHERS COUNCIL

### ALL INDIA TALENT SEARCH EXAMINATION

### 2019

### Class

### 8

Time Allowed: 90 Minutes

Maximum Mark: 70

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

**Important instructions**

- 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**.
- 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**
- Section **A** is **Scholastic Aptitude Test (SAT)**, contains 40 questions. This section covers **Physics, Chemistry, Biology & Mathematics**.
- Section **B** is **Mental Ability Test (MAT)**, **Computer Awareness** and **General Knowledge**, contains 30 questions.
- Each question should be answered by **darkening** the appropriate circles (A, B, C or D) with a **blue or black ball pen**.
- All questions are compulsory. There will be no negative marks for wrong answer.
- Answer recorded once in the answer sheet cannot be altered.
- All rough works should be done only in the space provided for **rough work** in this question paper.
- Calculator is not permitted in the examination hall.
- Candidate should write his / her name in the space provided for the purpose.

Candidate's Name:

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Roll Number :

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.....  
Candidate's Signature

.....  
Invigilator's Signature

## SECTION A

### GENERAL SCIENCE (Question No 1 to 25)

- 1 A farmer has been using excess quantities of chemical fertilizer in the field for a number of years. The crop yield began to reduce in spite of using chemical fertilizers.

Which of the following is correct option?

- (I) The soil become more acidic
- (II) The soil become more alkaline
- (III) The yield can be improved by adding slaked lime to the soil
- (IV) The yield can be improved by adding some organic matter
- (V) The yield can be improved by adding common salt

- |                |                 |
|----------------|-----------------|
| [A] (I) & (V)  | [B] (II) & (IV) |
| [C] (II) & (V) | [D] (I) & (III) |

- 
- 2 Which of the following group of algae can be described as most primitive?

- |                      |                        |
|----------------------|------------------------|
| [A] Blue green algae | [B] Golden brown algae |
| [C] Brown algae      | [D] Red algae          |

- 
- 3 Endemic species refers to

- [A] Threatened wild animals and plants which belong to different areas
- [B] Species which are capable of inter breeding
- [C] Those species of flora and fauna which are found exclusively in a particular area
- [D] All the plants and animals mentioned in the red data book

- 
- 4 Read the following statements and select the correct option

**Statement I :** The chemical substances produced by microorganisms which in low concentration are antagonistic to the growth of other microorganisms are called as antibiotics.

**Statement II:** A preparation of dead or attenuated pathogen, which when injected into a healthy person, provides immunity against a specific disease or number of diseases, is called as vaccine

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| [A] Statement A is correct      | [B] Statement B is correct        |
| [C] Both statements are correct | [D] Both statements are incorrect |

- 
- 5 The pair correctly matched in regard to a cell organelle and its function is

- |                           |                                  |
|---------------------------|----------------------------------|
| [A] Ribosome              | - Synthesis of protein           |
| [B] Endoplasmic reticulum | - Production of ATP              |
| [C] Golgi body            | - Carries hereditary information |
| [D] Mitochondria          | - Destroy foreign substance      |

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6 In which of the following organisms is the cell wall made up of silica?

- [A] Rhizopus [B] Mucor  
[C] Agaricus [D] Diatoms
- 

7 Oxytocin hormone is produced by

- [A] Pituitary [B] Adrenals  
[C] Hypothalamus [D] Thyroid
- 

8 Select the correct option which best suit the given descriptions for P, Q, R and S.

P – A simple tool used for removing weeds

Q – A tool which is used for ploughing with the help of tractor

R – A tool which is used for sowing with the help of tractor

S - A simple tool used for cutting of crops

	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>
[A]	Sickle	Plough	Cultivator	Khurpi
[B]	Sickle	Cultivator	Hoe	Cutter
[C]	Khupi	Plough	Seed drill	Sickle
[D]	Hoe	Cultivator	Seed drill	Sickle

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9 I am the source of synthetic polymers. I am a mixture of a number of carbon compounds which can be separated by fractional distillation. I am

- [A] Petrol [B] Diesel  
[C] Petroleum [D] Both [A] & [B]
- 

10 One gram of which of the following will give out the most amount of heat by complete combustion?

- [A] Coal [B] Wood  
[C] Diesel [D] Kerosene
- 

11 Where does the component of petroleum with highest boiling point condense during the fractional distillation of petroleum?

- [A] In upper most portion [B] In lower most portion  
[C] In middle portion [D] Cannot be said
- 

12 A highly reactive element X reacts with oxygen of air even at room temperature to give an oxide Y. The oxide Y is soluble in water. The aqueous solution of Y does not change the colour of red litmus solution but reacts with an aqueous solution of sodium hydroxide. Then element X is

- [A] Phosphorus [B] Sulphur  
[C] Sodium [D] Carbon
-

- 
- 13 On the basis of following features identify the correct fabric
- (i) It is prepared by condensation polymerisation of two monomers
  - (ii) It is very durable and can be recycled
  - (iii) It is use in making curtain, draperies and magnetic recording tapes
  - (iv) This fabric has two common names

[A] Nylon [B] Rayon  
[C] Polyester [D] Acrylic

---

- 14 Two elements A and B on burning in air give corresponding oxides. Oxides of both A and B are soluble in water. The aqueous solution of oxides of A is alkaline and reacts with aqueous solution of oxide of B to give another compound. Identify A and B

[A] A and B are metals [B] A and B are non-metals  
[C] A is metal and B is non-metal [D] A is non-metal and B is metal

---

- 15 “*We should practice the habit of conserving energy.*” Which of the following statements is related to the above comment?

[A] Increased use of fossil fuels is depleting their sources very fast  
[B] All energy used today is obtained from nonrenewable sources  
[C] Large area of forest have been cut down to obtain fire wood  
[D] Sunlight is gradually becoming dimmer

---

- 16 Which of the following is best explanation for statement, Polystyrene foam is used in insulating refrigerators and cold stores

[A] Polystyrene foam is heavy thus acts as a proper insulator  
[B] Polystyrene foam is the cheapest among all rest insulators  
[C] When air is blown through molten polystyrene, it forms light foam, which is excellent insulating and packaging material  
[D] polystyrene foam is biodegradable in comparison to rest polymeric insulators

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- 17 A body is at rest on the surface of the earth. Which one of the following statement is correct?

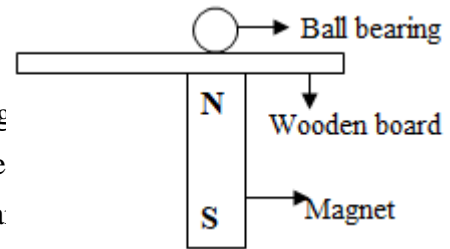
[A] No force is acting on the body  
[B] Only weight of the body acts on it  
[C] Net downward force is equal to the net upward force  
[D] None of the above

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18 A boy set up an experiment as shown in the diagram. As he slides the magnet across the wooden board, the ball bearing followed the magnet's movements and direction. What does the experiment show?

1. Magnetic force can be seen
2. Friction and gravity help to move the ball bearing
3. The ball bearing is made of a magnetic substance
4. Magnetic force can pass through the wooden board



- [A] 1 & 2  
[B] 3 & 4  
[C] 1, 3 & 4  
[D] 2, 3 & 4

---

19 The teacher asked the students to make a statement about friction. Which of the students spoke correctly?

- Alan: Friction holds a nail in a wall  
Arun: Ball bearings help increase friction  
Kavita: We can reduce friction but cannot make it zero  
Preeti: Life would be easy without friction

- [A] Alan & Arun  
[B] Alan & Kavita  
[C] Arun & Kavita  
[D] Preeti & Arun

---

20 The frequency of a source of sound is 100Hz. How many times does it vibrate in a minute?

- [A] 100  
[B] 600  
[C] 6000  
[D] 0.01

---

21 A positively charged body is brought near an uncharged gold leaf electroscope, then

- [A] No charge is induced in the leaves  
[B] Positive charge is induced in both leaves  
[C] Negative charge is induced in both the leaves  
[D] Positive charge is induced in one leaf and negative in the other

---

22 The pole star appears to be stationary because

- [A] It is bigger than other stars  
[B] It is brighter than other stars  
[C] It is closer than other stars  
[D] It is situated in the direction of the earth's axis

---

23 What is the effect on sound waves when humidity increases?

- [A] Speed of sound waves increases  
[B] Speed of sound waves decreases  
[C] Speed of sound waves remains same  
[D] Speed of sound waves becomes zero

---

24 Which of the following is the safest way to protect you from lightning?

- [A] Squat low on ground  
[B] Run to an open place  
[C] Open an umbrella for cover  
[D] Take shelter under a tree

---

25 The contact force exerted by one body on another body equal to the normal force between the bodies. It can be said that

- [A] The surface must be smooth
- [B] The force of friction between the bodies is zero
- [C] The bodies may be rough but they do not slip on each other
- [D] None of these

**MATHEMATICS (Question No 26 to 40)**

26 Additive inverse of  $\frac{3}{-4}$  is

- [A]  $\frac{3}{4}$
- [B]  $\frac{1}{4}$
- [C] 3
- [D] 0

---

27 If two adjacent angles of a parallelogram are in the ratio 3 : 2, then the measure of the angles are

- [A]  $72^\circ, 36^\circ$
- [B]  $108^\circ, 72^\circ$
- [C]  $100^\circ, 80^\circ$
- [D]  $144^\circ, 36^\circ$

---

28 If quotient =  $3x^2 - 2x + 1$ , remainder =  $2x - 5$  and divisor =  $x + 2$ , then the dividend is

- [A]  $3x^3 - 4x^2 + x - 3$
- [B]  $3x^3 - 4x^2 - x + 3$
- [C]  $3x^3 + 4x^2 - x + 3$
- [D]  $3x^3 + 4x^2 - x - 3$

---

29 The selling price of goods which cost ₹ 10, and were sold at a gain of 10% is

- [A] ₹ 12
- [B] ₹ 18
- [C] ₹ 11
- [D] ₹ 11.10

---

30 If the angles of a triangle are in the ratio 2 : 3 : 4, then the difference between the greatest and smallest angle is

- [A]  $10^\circ$
- [B]  $20^\circ$
- [C]  $30^\circ$
- [D]  $40^\circ$

---

31 The area of a parallelogram is  $12\frac{1}{4}$  cm<sup>2</sup>. If its height is  $1\frac{6}{7}$  cm, its base is

- [A]  $6\frac{31}{52}$  cm
- [B]  $22\frac{3}{4}$  cm
- [C] 20 cm
- [D]  $\frac{537}{28}$  cm

---

32 A boy gets 3 marks for the each correct sum and loses 2 marks for each incorrect sum. He does 24 sums and obtains 37 marks. The number of correct sums was

- [A] 20
- [B] 19
- [C] 31
- [D] 17

---

33 The radii of two cylinders are in the ratio 2 : 3 and their heights are in the ratio 5 : 3. What is the ratio of their volumes?

[A] 7 : 6

[B] 10 : 9

[C] 20 : 27

[D] 27 : 20

---

34 The diagonal of a rectangle is thrice its smaller side. Find the ratio of its side.

[A] 3 : 1

[B]  $2\sqrt{2} : 1$

[C]  $\sqrt{2} : 1$

[D]  $\sqrt{3} : 1$

---

35 The value of  $\sqrt{0.0028 + 0.0036}$  is

[A] 0.8

[B] 0.08

[C] 0.008

[D] 0.0008

---

36 In a world cup match against Srilanka, for six times Sachin Tendulkar hits a six out of 30 balls he plays. What is the probability that in a given throw, the ball does not hit a six?

[A]  $\frac{1}{4}$

[B]  $\frac{5}{4}$

[C]  $\frac{4}{5}$

[D]  $\frac{3}{4}$

---

37 The cost of diamond varies directly as the square of its weight. A diamond weighing 10 decigrams costs ₹ 8000. If it breaks into two pieces whose weights are in the ratio 3 : 2, then the loss incurred is

[A] ₹ 3840

[B] ₹ 3960

[C] ₹ 4040

[D] ₹ 4160

---

38 A parking garage charges ₹ 1.50 for the first hour and ₹ 0.75 for each additional hour or part of an hour. How much will it cost to park in the garage for  $6\frac{1}{2}$  hours?

[A] ₹ 5.63

[B] ₹ 6.00

[C] ₹ 6.38

[D] ₹ 14.63

---

39 A two digit number whose one's place digit  $x$  and ten's place digit  $y$  is

[A]  $10x + y$

[B]  $x + y$

[C]  $xy$

[D]  $10y + x$

---

40 The area of a regular hexagon whose side is 10 cm is

[A]  $150\sqrt{3}$  cm<sup>2</sup>

[B]  $50\sqrt{3}$  cm<sup>2</sup>

[C] 200 cm<sup>2</sup>

[D] 150 cm<sup>2</sup>

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## SECTION B

- 41 Which protocol provides e-mail facility among different hosts?  
[A] SMTP [B] SNMP  
[C] Telnet [D] FTP
- 
- 42 GIF is the extension of which file  
[A] Image source format [B] Bitmap image format  
[C] Cursor image file. [D] Both b & c
- 
- 43 In which grouping, the formatting of text is done in Word?  
[A] Characters, Sections and Paragraphs  
[B] Paragraphs, Indexes and Sections  
[C] Tables, Paragraphs and Indexes  
[D] Indexes, Characters and Tables
- 
- 44 The patterns of printed lines on most products are called.  
[A] Striping. [B] Scanners  
[B] OCR [D] Barcode
- 
- 45 By clicking on this icon, one can access the networked resources, usually shared resources. This icon is  
[A] My Computer [B] Connect to Internet  
[C] Network Neighbourhood [D] My Document
- 
- 46 Which one of the following is considered as foundation of modern education in India?  
[A] The Charter Act of 1813 [B] Macaulay's Minutes  
[C] The Hunter Commission of 1882 [D] Woods dispatch of 1854
- 
- 47 Ryotwari settlement was introduced by the British in  
[A] Bengal Presidency [B] Madras Presidency  
[C] Bombay presidency [D] Madras and Bombay presidencies
- 
- 48 Consider the following statement related to Raja Ram Mohan Roy:  
**i. He advocated widow remarriage**  
**ii. He strongly advocated for the abolition of Sati**  
**iii. He advocated for the promotion of English language**  
**iv. He founded Veda Samaj**
- Which one of the following statement/s is are correct.  
[A] i, ii and iii [B] i, and iii  
[C] i, ii and iii [D] All of the above



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49 Which one of the following comes under the Jurisdiction of both HC and SC.?

- [A] Dispute between central and state Govt.
- [B] Judicial review
- [C] Protection of Fundamental Right
- [D] Interpretation of the constitution

---

50 Anita Anand, who is an Indian born politician, has become part of which country's cabinet?

- [A] Russia
- [B] Australia
- [C] United Kingdom
- [D] Canada

---

51 The following map shows the production of which one of the following crop?

- [A] Wheat
- [B] Tea
- [C] Rice
- [D] Coffee



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52 Which one of the following is not correctly matched?

- [A] Konrk - Puri
- [B] Victoria Memorial - Kolkata
- [C] Sun Temple - Delhi
- [D] Lal Bagh Garden - Bangalore

---

53 Choose the odd pair of words

- [A] Resistance – Ohm
- [B] Time - Seconds
- [C] Length – Metre
- [D] Pressure - Barometer

---

54 Who is the Supreme Commander of Indian Army?

- [A] Prime Minister
- [B] Commander in chief
- [C] Defense Minister
- [D] President

---

55 Replace the question mark

***DHL, PTX, BFJ, ?***

- [A] CGK
- [B] KOS
- [C] NRV
- [D] RVZ

---

56 A man pointing to a photograph says, "The lady in the photograph is my nephew's maternal grandmother." How is the lady in the photograph related to the man's sister who has no other sister?

- [A] Cousin  
[C] Mother

- [B] Sister-in-law  
[D] Mother-in-law
- 

57 I am sixth in the queue from either end. How many people are in the queue?

- [A] 13  
[C] 10

- [B] 12  
[D] 11
- 

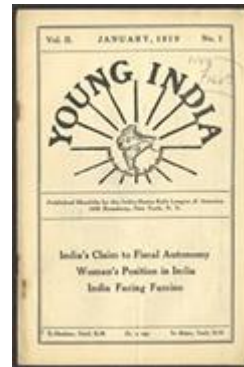
58 In certain code HKUJ written as FISH in the same code UVCD written as

- [A] STAR  
[C] STAL

- [B] STAB  
[D] STAK
- 

59 The following news journal is related to:

- [A] Gandhiji  
[B] Annie Besant  
[C] Aurobindo Gosh  
[D] Bala gangadhara Tilak



---

60 Substitute the correct mathematical symbols in place of \* in the following equation:

$$16 * 4 * 5 * 14 * 6$$

- [A]  $\div - = *$   
[C]  $\div \times = +$

- [B]  $- * + =$   
[D]  $\div + = -$
- 

61 Answer the following question based on this data

- A + B means A is brother of B  
A - B means A is father of B  
A \* B means A is uncle of B  
A / B means A is sister of B

From the given expression M + N - T \* S which of the following is true?

- [A] M is the grandfather of T  
[C] M is the sister of S
- [B] M is the uncle of S  
[D] M is the grandfather of S
- 

62 A, B, C, D, and E are standing in a line facing north. E is standing 40 m left to B. A is standing 20 m left to C. D is standing 20 m right to E and 50 m right to C. where is B standing from D ?

- [A] 20 m right  
[C] 40 m right
- [B] 30 m right  
[D] 40 m left
-

63 Replace the question mark

14, 16, 13, 17, 12, 18, ?

[A] 11

[B] 17

[C] 19

[D] 20

64 A car driver is noticed that at the time of sunrise sun rays are falling on him left side. Towards which direction is the car going?

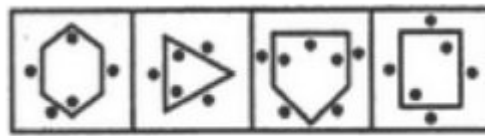
[A] South

[B] North

[C] West

[D] East

65 Choose the figure which is different from the rest.



[A]

[B]

[C]

[D]

66 Which one of the answer figure is correct match of question figure?

Question Figure



Answer Figure



[A]



[B]



[C]



[D]

67 A house always has.

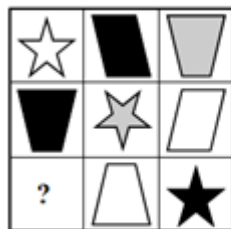
[A] Stairs

[B] Windows

[C] Walls

[D] Kitchen

68 Replace question mark.



[A]



[B]



[C]



[D]

69 Replace the question mark

LXF, MTJ, NPN, OLR, ?

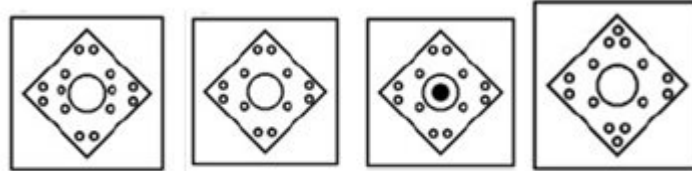
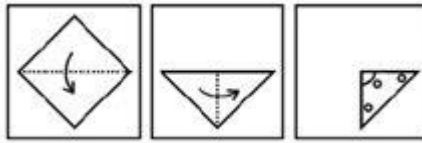
[A] PHV

[B] PIU

[C] PJW

[D] PKX

70 A piece of paper is folded and punched as shown below in the question figures. From the given answer figures, indicate how it will appear when opened.



[A]

[B]

[C]

[D]

\*\*\*\*\*