Test Booklet Code

| **0814** |

NATIONAL TEACHERS COUNCIL

All India Talent Search Examination - 2014

| **Class - VIII** |

Time Allowed: 2 Hours   Maximum Mark: 100

This Test Booklet contains 20 pages. Do not open the Test Booklet until you are asked to do so.

Important instructions

1.   This question paper contains 100 multiple choice questions each of one mark.

2   The question paper is divided into two sections, **A** and **B.**

3.   Section **A** is **S**cholastic **A**ptitude Test (**SAT**), contains 60 questions. This section covers **Physics, Chemistry, Biology and Mathematics**.

4.   Section **B** is **M**ental **A**bility **T**est **(MAT), C**omputer **A**wareness and **G**eneral **K**nowledge**,** contains 40 questions.

5.   There will be no negative marks for wrong answer.

6.   A separate answer sheet is provided for answering the questions. Each question should be answered by **darkening** the appropriate circle (A, B, C, or D) with a **blue or black ball pen**.

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.


Roll Number   :………………………

Candidates Name   : …………………….

Candidates Signature   :……………………..   ……………………….

                                                     Invigilator's Signature

SECTION: A

PHYSICS (Q No: 1 to 15)

1.   In liquids, the pressure

      (A) Increases with depth

      (B) Decreases with depth

      (C) Remains same at all depths

      (D) Sometimes increases and sometimes decreases with depth

2.   David, an astronaut threw a ball in space. It kept moving in a straight line. This is because

      (A) There is no gravity in space

      (B) The frictional force is less than gravitational force

      (C) There is no frictional resistance as there is no air

      (D) The gravity is greater than friction

3.   The energy transformation taking place in a cell

      (A) Electrical energy to chemical energy

      (B) Chemical energy to electrical energy

      (C) Magnetic energy to Electrical energy

      (D) Mechanical energy to chemical energy

4.   A pond of water appears shallow because of

      (A) Diffraction   (B) Dispersion

      (C) Reflection   (D) Refraction

5.   Two bodies P an d Q of mass 900 Kg and 1200 Kg exert a pressure of 2250 $N\text{-}m^{-2}$ and 2880 $N\text{-}m^{-2}$ respectively on a surface. The area of contact of

      (A) P is equal to Q   (B) P is greater than Q

      (C) P is less than Q   (D) None of these

6.   Observe the figure given below.
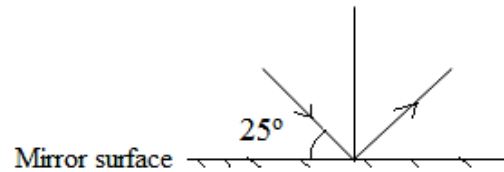
The angle between the incident ray and the reflected ray is

(A) 25º   (B) 65º

(C) 90º   (D) 130º

7.   A ball bounces higher at high altitudes than on plains because

(A) The pressure at higher altitudes is higher than that on plains

(B) Downward pull due to gravity is less at higher altitudes

(C) The rarefied air offers less resistance

(D) The air is more pure at higher altitudes

8.   Which of the following statement is NOT CORRECT?

(A) Grass and dampness on a cricket ground increase friction

(B) Friction causes moving parts of machines to wear out

(C) Moving parts of vehicle become hot due to friction

(D) Friction is less on a dry floor than a wet floor

9.   The edge of a knife is made sharp to have

(A) Less pressure   (B) More pressure

(C) No question of pressure   (D A good glow

10.   When a ship enters a sea from a river

(A) It sinks a little   (B) Its rises a little

(C) It remains at the same level (D) It may rises or sinks

11.   The **INCORRECT** match in the following is

        (A) Solar Cell   ⟶   Silicon

        (B) Secondary   ⟶   cell can be recharged

        (C) Electric fuses ⟶ safety measure

        (D) Earthings   ⟶   power back up

12.   In the case of a hypermetropia patient the **"near point"** is

        (A) Closer than normal   (B) Farther than normal

        (C) The same as far point   (D) Behind the eye

13.   A geostationary satellite revolves from

        (A) North to south   (B) South to north

        (C) West to east   (D) East to west

14.   Which of the following is a wrong statement?

        (A) A rainbow can be seen only when the sun is at your front

        (B) Sometimes two rainbows can be seen simultaneously

        (C) The same rainbow can be observed by two persons if both have normal vision

        (D) Rainbow is formed due to refraction of light in rain drops

15.   Read the following statements carefully and mark the correct option

.

| Statement **P** | ⟹ | The velocity of sound in the air increases due to presence of moisture in it |

| Statement **Q** | ⟹ | The presence of moisture in air lowers the density of air |

        (A) Both the statements P and Q are true and Q is the correct explanation of P

        (B) Both the statements P and Q are true and Q is not the correct explanation of P

        (C) The statement P is true and Q is false

        (D) The statement P is false and Q is true

CHEMISTRY (Q No: 16 to 25)

16. Which one of the following conducts electricity in molten state?

    (A) Sugar   (B) Glucose

    (C) Common salt   (D) Urea

17. Liquefied Petroleum Gas consists of mainly

    (A) Methane, Ethane, Hexane   (B) Methane, Butane, Propane

    (C) Ethane, Hexane, Nonane   (D) Nonane, Ethane, Hexane

18. Which one of the following is NOT the characteristic of good fuel?

    (A) Easily storable   (B) Less smoke

    (C) High calorific value   (D) Very low ignition temperature

19. In the process of electroplating

    (A) Electrical energy is converted into chemical energy

    (B) Electrical energy is converted into heat energy

    (C) Electrical energy is converted into mechanical energy

    (D) All the above

20. Dry ice is

    (A) Solid ammonia   (B) Solid carbon dioxide

    (C) Heavy water   (D) Solidified alcohol

21. Elements which show the properties of both metals and non-metals are called

    (A) Colloid   (B) Alloys

    (C) Allotropes   (D) Metalloids

22. Which of the following has highest calorific value?

    (A) Hydrogen   (B) Petrol

    (C) Coal   (D) LPG

23.   Match the following and select the correct option

Column A		Column B	
P	Lead	**1**	Pitch blende
Q	Aluminium	**2**	Monazite
R	Thorium	**3**	Bauxite
S	Uranium	**4**	Galena

	P	**Q**	**R**	**S**
A	4	1	2	3
B	2	3	1	4
C	4	3	2	1
D	1	4	3	2

24.   Which one of the following statements is CORRECT?

(A) Thermosetting plastic is a soft and transparent material

(B) Thermosetting plastic can be bent easily

(C) Thermosetting plastic does not melt on heating

(D) Thermosetting plastic is a good conductor of heat

25.   A flame always points upwards because

(A) Gases produced in flame are cold

(B) Gases produced in flame are hot

(C) Hot gases are lighter and hence rise up

(D) Both (B) & (C)

BIOLOGY (Q No: 26 to 35)

26.   A machine used for both harvesting and threshing

(A) Harvester   (B) Thresher

(C) Combine   (D) Sickle

27.   Which one of the following is a CORRECT statement?

(A) A group of population capable of interbreeding is called endemic species

(B) Members of a species have no known similar characteristics

(C) Biodiversity is a non renewable resource

(D) Tigers, lions and foxes belong to the same species

28.   The power house of a cell is

(A) Centrosome   (B) Cytoplasm

(C) Chromosome   (D) Mitochondria

29.   "Cells are the structural unit of living organism" because

(A) Because they have many shapes and sizes

(B) They are the smallest living part of an organism

(C) They are capable of independent existence

(D) They are unicellular or multicellular

30.   "Fishes lay thousands of eggs at a time." This is because

(A) To ensure quick multiplication in their population

(B) To ensure their type do not get eradicated

(C) As many of the eggs are destroyed by nature

(D) They have to release many eggs but only one sperm in a year

31.   Bacteria are used in experiments to study the effect of changing temperature on the growth of microbes instead of viruses because

(A) Viruses cannot reproduce outside a host

(B) Bacteria reproduce faster than viruses

(C) Viruses do not have cell walls

(D) Bacteria are larger than viruses

32.   Match the following and select the correct option

	Column A		Column B
P	Apiculture	**1**	Grapevines
Q	Silviculture	**2**	Fishes
R	Viticulture	**3**	Honey bees
S	Pisciculture	**4**	Forest trees

	P	**Q**	**R**	**S**
A	**2**	**1**	**4**	**3**
B	**1**	**4**	**3**	**2**
C	**3**	**2**	**1**	**4**
D	**3**	**4**	**1**	**2**

33.   In certain diseases, antibiotics are administered. The objective is to

      (A) Stimulate production of white blood cells.

      (B) Stimulate the production of antibodies

      (C) Inhibit the growth of bacteria

      (D) Produce toxin against bacteria

34.   Leather shoes are often covered by patches of fluffy mass during the rainy season, if unattended for some days. This is due to the growth of

      (A) Bacteria   (B) Blue-green algae

      (C) Green algae   (D) Fungus

35.   Short duration crops are especially suitable for

      (A) Hilly areas   (B) Dry farming

      (C) Sandy areas   (D) Wet farming

MATHEMATICS (Q No: 36to 60)

36. The sum of the squares of two sides of a triangle is equal to the third side. The angle opposite to the third side is

 (A) Right angle   (B) Obtuse angle

 (C) Acute angle   (D) Complete angle

37. The area of two circles is in the ratio 25: 36. The ratio of their circumference is

 (A) 25 : 36   (B) 12 : 10

 (C) 5 : 6   (D) 3 : 4

38. A number 138 is divided into three numbers in 1 : 2 : 3. The product of the smallest & largest number of the parts is

 (A) 3174   (B) 1587

 (C) 828   (D) 1058

40. In a class of 45 students, the ratio of boys and girls is 2 : 3. How many more boys are to be added to make the ratio 1 : 1?

 (A) 6   (B) 9

 (C) 12   (D) 15

41. In the figure given below the square have two sides which are tangent to the circle. If the area of the circle is **$4a^2\pi$,** what is the area of the square?
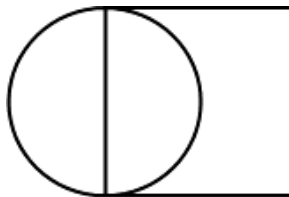
 (A) $4a^2$ (B) 4a

 (C) a^2 (D) $16a^2$

Questions 42 to 45: Study the following graph and answer the questions 42 to 45.

Sales in Rs Thousand
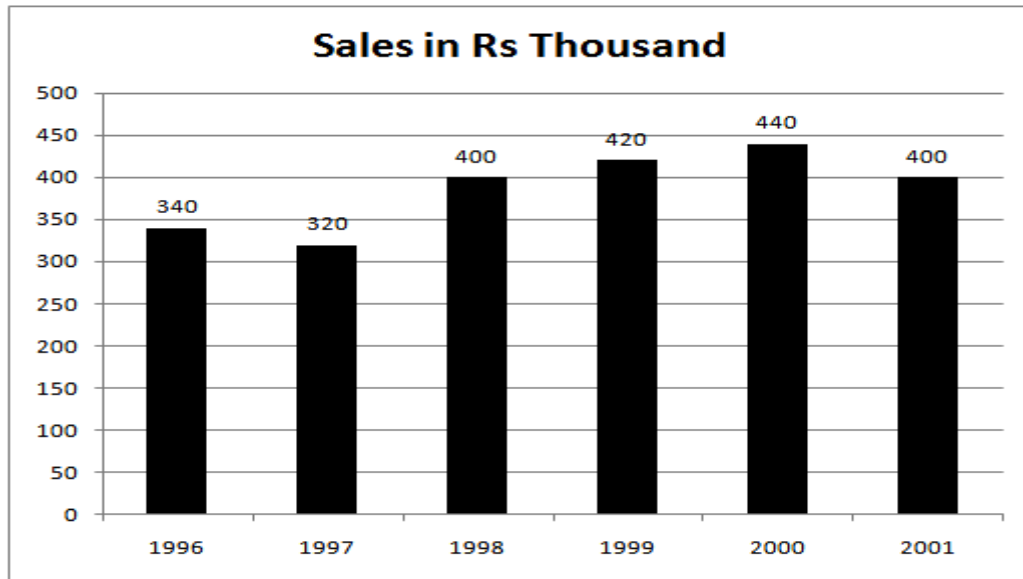
42. In which year the sale is maximum?

    (A) 1999   (B) 1999

    (C) 2000   (D) 2001

43. By how much amount are the sales in 1999 more than those in 1997?

    (A) Rs 1000   (B) Rs. 10000

    (C) Rs. 100000   (D) Rs. 1000000

44. The sales in 1997 are how many times those in 1998?

    (A) 0.8   (B) 1.25

    (C) 8   (D) 0.25

45. The sales in 2000 are what percent of those in 1998?

    (A) 40   (B) 11

    (C) 1.1   (D) 110

46. The sum of the additive inverse and multiplicative inverse of 2 is

    (A) $\dfrac{3}{2}$ (B) $\dfrac{-3}{2}$

    (C) $\dfrac{1}{2}$ (D) $\dfrac{-1}{2}$

47. The value of x for which the two rational numbers $\dfrac{3}{7}$, $\dfrac{x}{42}$ are equivalent is

   (A) 6   (B) 12

   (C) 18   (D) 10

48. In a parallelogram ABCD, if the measure of the angle A is 45º, then the other angles are

   (A) 45º, 135º, 135º   (B) 45º, 120º, 120º

   (C) 60º, 135º, 135º   (D) 60º, 120º, 120º

49. Which one of the following statement is NOT CORRECT in case of rectangle?

   (A) It has two pairs of equal sides

   (B) It has all its sides of equal length

   (C) Its diagonals are equal

   (D) Its diagonals bisect each other

50. Between which two consecutive whole numbers does $\sqrt{95}$ lie?

   (A) 7 and 8   (B) 8 and 9

   (C) 9 and 10   (D) 10 and 11

51. 72% of 25 students are excellent in mathematics, others are average in mathematics. How many students is average in students?

   (A) 18   (B) 13

   (C) 12   (D) 7

52. The degree of the polynomial $5x^3 - 6x^3y + 4y^2 - 8$ is

   (A) 3   (B) 4

   (C) 2   (D) 8

53. A right cylindrical vessel is filled with water. How many right cones having same diameter height as of right cylinder will be needed to store that water?

   (A) 5   (B) 4

   (C) 3   (D) 2

54.   The standard form of 4587000 is

(A) 4.587×10^6 (B) 4.587×10^{-6}

(C) 4587×10^3 (D) 4.587×10^7

55.   Pipe **A** can fill an empty tank in 5 hours, while Pipe **B** can empty the full tank in 6 hours. If both are opened in the empty tank, the time taken to fill it up completely is

(A) 10 hours   (B) 40 hours

(C) 20 hours   (D) 30 hours

56.   Study the information given below and answer the question that follows.

When it is 11:20am in Mumbai, it is 2:50pm the same day in Tokyo, Japan.

The flying duration for a flight from Mumbai to Tokyo is 8 hours 35 minutes.

Ranjini caught the flight from Mumbai to Tokyo at 2:50pm on 8th November 2014. Ranjini arrived in Tokyo at

(A) 11:25pm on 8th November 2014

(B) 2:55am on 9th November 2014

(C) 2:25am on 9th November 2014

(D) 8:25pm on 8th November 2014

57.   In the figure given below PQRS and TURV are rectangles. The lengths shown in the figure are in centimeters. If the perimeter of the unshaded rectangle TURV is 32cm, then the value of x is
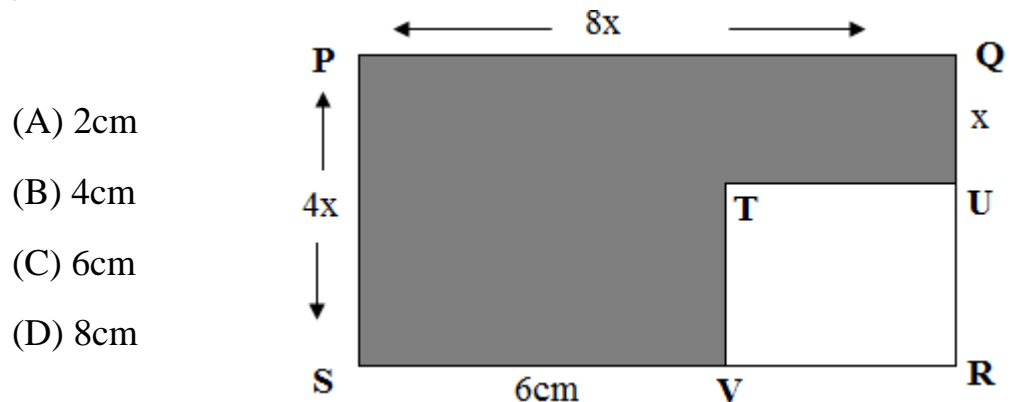
(A) 2cm

(B) 4cm

(C) 6cm

(D) 8cm

58. The value of $\sqrt{900} + \sqrt{0.09} - \sqrt{0.000009}$

    (A) 30.097   (B) 30.197

    (C) 30.297   (D) 30.397

59. Of the 750 participants in a professional meeting 450 are female and one half of the female and one fourth of the male participants are less than thirty years old. If one of the participants will be randomly selected to receive a prize, what is the probability that the person selected will be greater than thirty years old?

    (A) One-eighth   (B) One-fourth

    (C) Three-fifths   (D) Three-fifths

60. The number of revolutions of wheel of diameter 70cm makes in travelling a distance of 990m is

    (A) 225   (B) 450

    (C) 375   (D) 550

SECTION: B

61. The software that allows users to surf the internet is called

    (A) Search engine   (B) Internet Service Provider
    (C) Multimedia Application   (D) Browser

62. What characteristics of read – only memory (ROM) makes it useful?

    (A) ROM Information can be easily updated
    (B) Data in ROM is nonvolatile
    (C) It is the largest data storage
    (D) None of the above

63. Number in table columns are usually

      (A) Right – aligned   (B) Left Aligned

      (C) Justified   (D) Centered

64. An example of system software.

      (A) Microsoft word   (B) Microsoft Access

      (C) LOGO   (D) Windows Vista

65. What do we call a collection of two or more computers that are located within a limited distance of each other and that are connected to each other directly or indirectly?

      (A) Internet   (B) Local Area network

      (C) Wide area network   (D) Wi- Fi

66. '.BAT' extension refers usually to what kind of file

      (A) Word Processor   (B) MS Document

      (C) Audio File   (D) Compressed archive File

67. In MS - Excel, the function that is used to find the highest value in a given range of value is called

      (A) Min ( )   (B) Max

      (C) Avg ( )   (D) Sum ( )

68. The Short cut key used for copying selected text into clipboard is?

      (A) Ctrl +X   (B) Ctrl + V

      (C) Ctrl + C   (D) Ctrl + D

69. Which one of the following is NOT correctly matched?

      (A) Lord Wellesley   -   Subsidiary Alliance

      (B) William Bentinck   -   Abolition of Sati

      (C) Lord Canning   -   Partition of Bengal

      (D) Lord Dalhousie   -   Doctrine of Lapse

70. Which one of the following statement is not true related to 'The Great Revolt of 1857'?

 (A) The greased Cartridge became the immediate cause for the Great Revolt of 1857

 (B) Educated middle class was not actively participated in this movement

 (C) The Act of 1858 was the result of this revolt

 (D) The revolt of 1857 was supported by the Nizam of Hyderabad

71. Who was the founder of Brahma Samaj

 (A) Rajarammohan Roy

 (B) Swami Dayananda Saraswathy

 (C) Iswar Chandra Vidhyasagar

 (D) Swami Vivekananda

72. With reference to the Indian freedom struggle which one among the following event occurred earliest?

 (A) Quit India Movement

 (B) Non Co operation Movement

 (C) Civil Disobedience Movement

 (D) Champaran Satyagraha

Direction for the Questions No. 74 & 75: Read this famous speech and answer the questions:

"Long years ago we made a tryst with destiny and now the time comes when we will redeem our pledge, not wholly or in full measure, but very substantially. At the stroke of the midnight hour, when the world sleeps, India will awake to life and freedom.

A moment comes, which but comes rarely in history**, when we step out from the old to the new,** when an age ends and when the soul of a nation long suppressed, finds utterance. We end today a period of ill fortune, and India discovers herself again."

73.   Who made this famous speech on 15th August 1947?

        (A) Jawaharlal Nehru   (B) Mahatma Gandhi

        (C) Mount Batten   (D) Clement Atlley

74.   What is the correct meaning of the phrase '**when we step out from the old to the new**?'

        (A) We move from British administration to Indian administration

        (B) We move to a world of new expectation

        (C) We will make all things new

        (D) End of British administration and beginning of Indian administration

75.   Who is popularly known as 'Missile man of India'?

        (A) Vikram Sara Bai   (B) A. P J Abdul Kalam

        (C) CV Raman   (D) S Chandra Sekhar

76.   What is the name of Central Bank of India?

        (A) State Bank of India   (B) Reserve Bank of India

        (C) Bank of Baroda   (D) Punjab National Bank

77.   Identify the personality?

        (A) Kailash Satyarthi

        (B) Dr. Radhakrishnan

        (C) Utpal Dutta

        (D) Shambu Mithra

78.   Identify this great personality who associated with 'Theosophical Society'

        (A) Sarojini Naidu

        (B) Annie Besant

        (C) Madam Bikaji Kama

        (D) Madam HV Blavatsky

79. The arrival of phailain super cyclone reached and made huge destruction in India on:

    (A) 12th Oct 2013

    (B) 13th Oct 2013

    (C) 11th Oct 2013

    (D) 14th Oct 2013

80. This method of cultivation normally practices in hilly region to conserve soil resource?

    (A) Strip cropping

    (B) Terrace Farming

    (C) Inter cropping

    (D) Contour ploughing

81. Identify this great British architecture who is closely associated with the construction of Rashtrpati Bhavan.

    (A) Herbert Baker

    (B) Dalhousie

    (C) Thomas Moore

    (D) Edwin Lutyens

82. Which one of the following is not correctly matched?

    (A) Simon Commission   -   1927

    (B) Chouri Choura Incident   -   1922

    (C) First Round Table Conference   -   1931

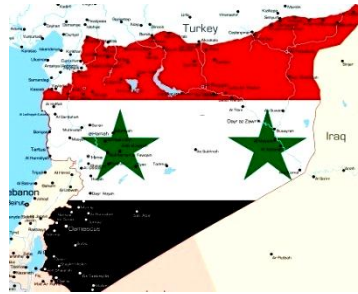   (D) Quit India Movement   -   1942

83. The following map of India shows:

    (A) Iron Ore Deposits

    (B) Bauxite Deposits

    (C) Tea producing area

    (D) Mica Deposits
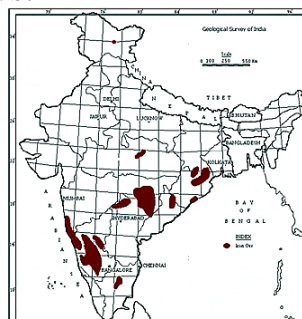
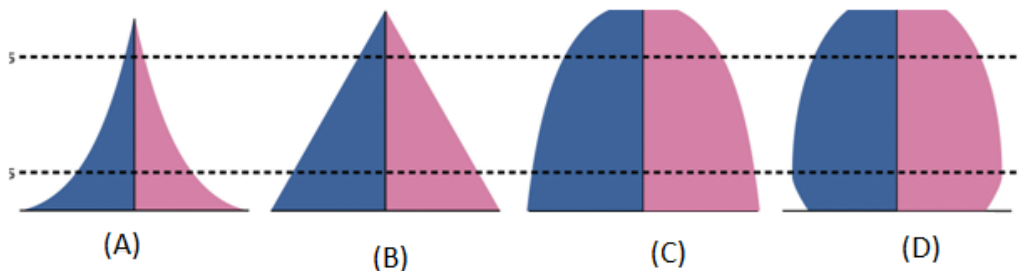84. Identify the following Asian country where human life becomes a big threat.

    (A) Sudan

    (B) Saudi Arabia

    (C) Iraq

    (D) Syria

85. Who is the commander of Indian Army?

    (A) Prime Minister   (B) Commander in chief

    (C) Defense Minister   (D) President

86. Which one of the following *Population Pyramid* indicates the high birth rate and high death rate?

87. The 21st century started on January 1 in the year

    (A) 2001   (B) 2011   (C) 2101   (D) 2100

88. If '**HKUJ**' means '**FISH**', what does '**UVCD**' mean?

    (A) STAR   (B) STAB   (C) STAK   (D) STAL

89. Replace the question mark

    15,   52,   26,   63,   37,   ?

    (A) 74   (B) 48   (C) 66   (D) 26

90. What would be the most useful thing to do first of all if you find a man standing on the railway track and a train approaching two hundred yards away?

    (A) Inform the police

    (B) Record in mobile and upload in Social Media

    (C) Ask the engine driver to stop train

    (D) Drag him out

91. I am 8th in the queue from either end. How many people are in the queue?
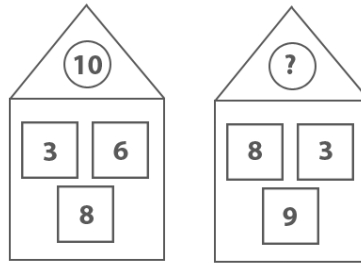
    (A) 17   (B) 18   (C) 15   (D) 16

92. Replace the question mark:

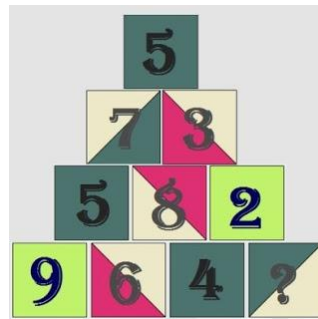   AZ   CX   EU   GS   ?

    (A) IR   (B) JQ   (C) IQ   (D) HP

93. Insert the missing number.

    (A) 15

    (B) 16

    (C) 27

    (D) 14

First house: 10 (top), 3, 6, 8
Second house: ? (top), 8, 3, 9

94. Replace the question mark

    (A) 5

    (B) 3

    (C) 4

    (D) 1

Pyramid:
5
7 3
5 8 2
9 6 4 ?

95. A band passes around all the wheels so that they can all be turned by the driving wheel. When the driving wheel 'D' turns in the direction shown. Which way will the wheel B turn?

    (A) Clockwise

    (B) Cannot move

    (C) Anti-clockwise

    (D) Either way
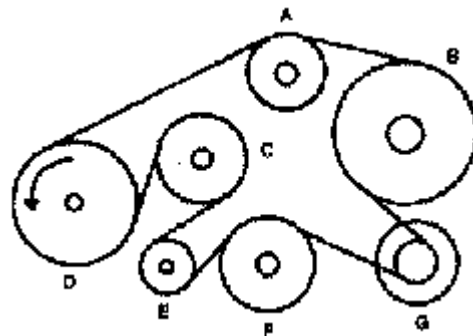
96. In a library, 30% books are English books and 10% are Hindi books. If the remaining 3600 books are in Hindi, what is the total number of books in that library?

    (A) 5000   (B) 4000   (C) 6000   (D) 8000

97. If Kilometer is related to Distance, Potential is related to:

    (A) Density   (B) Volt

    (C) Acceleration   (D) Momentum

98. Which one of the following is the same as

    Wrestling, Karate , Boxing

    (A) Swimming   (B) Polo   (C) Judo   (D) Hockey

99. Find the odd one out:

    (A) Army : : General

    (B) March : : Members

    (C) Meeting : : Chairman

    (D) Team : : Captain

100. 2014 Commonwealth games was held at

    (A) Incheon   (B) Glasgow   (C) Jakarta (D) Delhi

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