



Test Booklet Code

0714

NATIONAL TEACHERS COUNCIL

**All India Talent Search Examination - 2014**

Class - VII

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 **Scholastic Aptitude Test (SAT)**, contains 60 questions. This section covers **Physics, Chemistry, Biology and Mathematics**.
4. Section **B** is **Mental Ability Test (MAT)**, **Computer Awareness** and **General Knowledge**, 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 : .....

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Invigilator's Signature

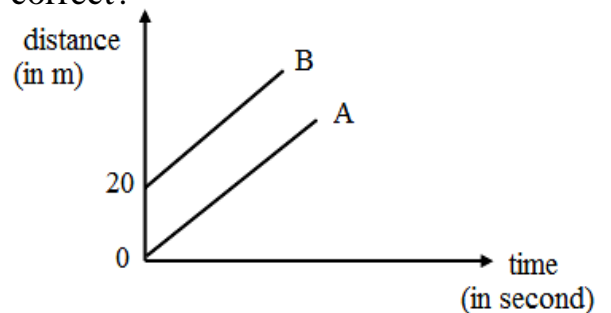
**SECTION: A****PHYSICS (O No: 1 to 15)**

1. The colour of an opaque object is due to the colour it  
(A) Reflects (B) Refracts  
(C) Absorbs (D) Scatters
2. Which one of the following statements is NOT correct?  
(A) Distance is the length of the path covered by a body  
(B) Distance is a scalar quantity  
(C) Distance can be negative  
(D) Distance can never be zero for a moving body
3. A pendulum of length 2m makes 32 oscillations in 4 seconds. The frequency of the pendulum is  
(A) 16 Hz (B) 8 Hz  
(C) 4 Hz (D) 32 Hz
4. Decibel is  
(A) A musical instrument (B) A measure of sound level  
(C) A musical noise (D) The wave length of sound
5. The reverberation of sound in a hall result due to continued  
(A) Absorption (B) Diffraction  
(C) Interference (D) Reflection
6. The period of revolution of a geostationary satellite is  
(A) 24 hours (B) 30 days  
(C) 365 days (D) Not constant

7. In summer, water is stored in unglazed earthen pots because
- (A) These are cheap
  - (B) Evaporation through pores makes the water cooler
  - (C) Earthen pots do not need much rinsing and cleaning
  - (D) More water can be stored in earthen pots
8. A thermos flask prevents loss or gain of heat by
- (A) Conduction only
  - (B) Convection only
  - (C) Radiation only
  - (D) All of these
9. Mercury is used as a liquid in thermometer because
- (A) It is costly
  - (B) It expands less than glass
  - (C) It does not wet the wall of the glass tube
  - (D) None of the above
10. During a cyclone air moves from
- (A) Region of high pressure to low pressure
  - (B) Region of low pressure to high pressure
  - (C) Region of high velocity to low velocity
  - (D) Region of low velocity to high velocity
11. The distance – time graphs of two bodies A and B are shown below. Study the graph and answer the question that follows.

Which one of the following statement is correct?

- (A) A is moving faster than B
- (B) B is moving faster than A
- (C) B is always 20m behind A
- (D) A is always 20 m behind B



12. Kilowatt hour is a unit of  
 (A) Current (B) Potential difference  
 (C) Electric Energy (D) Electric power
13. Match the following and select the correct option

Column A		Column B	
<b>P</b>	Electromagnet	<b>1</b>	Volt
<b>Q</b>	Electric Iron	<b>2</b>	Solenoid
<b>R</b>	Potential difference	<b>3</b>	Joule's heating

	<b>P</b>	<b>Q</b>	<b>R</b>
<b>A</b>	<b>2</b>	<b>1</b>	<b>3</b>
<b>B</b>	<b>2</b>	<b>3</b>	<b>1</b>
<b>C</b>	<b>3</b>	<b>2</b>	<b>1</b>
<b>D</b>	<b>1</b>	<b>2</b>	<b>3</b>

14. Water boils at 212°F or 100°C and melts at 32°F or 0°C. If the temperature of a particular day is 35°C, it is equivalent to  
 (A) 95°F (B) 85°F  
 (C) 99°F (D) 90°F
15. An object is placed at the centre of curvature (C) of a concave mirror; the image will be formed  
 (A) At F (B) Between F and C  
 (C) At C (D) Beyond C

### CHEMISTRY (O No: 16 to 25)

16. The method that cannot be used to remove the permanent hardness of water  
 (A) Adding sodium carbonate (B) Distillation  
 (C) Adding caustic soda (D) Boiling
17. Natural rubber is  
 (A) Polyisoprene (B) Polyamide  
 (C) Polyester (D) Polysaccharid

18. Match the following and select the correct option

Column A		Column B	
<b>P</b>	Caustic soda	<b>1</b>	$2\text{CaSO}_4 \cdot \text{H}_2\text{O}$
<b>Q</b>	Washing soda	<b>2</b>	NaOH
<b>R</b>	Plaster of paris	<b>3</b>	$\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$
<b>S</b>	Gypsum	<b>4</b>	$\text{Na}_2\text{CO}_3$

	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>
<b>A</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>1</b>
<b>B</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>3</b>
<b>C</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>3</b>
<b>D</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>2</b>

19. Hydrogen gas combines with Oxygen gas to form liquid water. Here, water is a

- (A) Element                      (B) Homogeneous mixture  
 (C) Solution                      (D) Chemical compound

20. Two changes are given below.

**P**  $\longrightarrow$  *A piece of magnesium gives off bright flames when burnt.*

**Q**  $\longrightarrow$  *A piece of iron glows red when heated strongly.*

Which one of the following is true regarding P and Q?

- (A) Both P and Q are physical changes  
 (B) Both P and Q are chemical changes  
 (C) P is chemical change and Q is physical change  
 (D) P is physical change and Q is Chemical change

21. Acids are stored in glass containers because

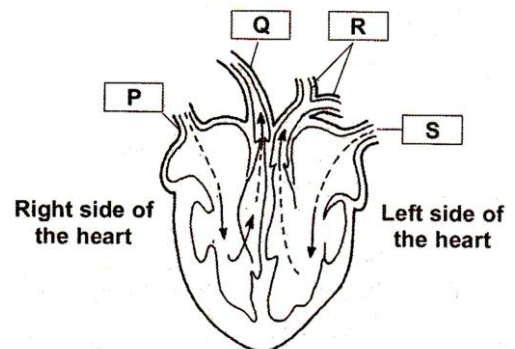
- (A) Metal reacts with the acid stored in them  
 (B) Metal containers are heavy and expensive  
 (C) Glass containers are transparent  
 (D) Glass containers are cheaper

22. A colourless liquid turns blue litmus red and reacts with magnesium to produce a gas. The colourless liquid is  
 (A) Basic (B) Acidic  
 (C) Neutral (D) Both (A) and (B)
23. A chemical reaction in which heat is evolved is called  
 (A) Neutralization reaction (B) Decomposition reaction  
 (C) Endothermic reaction (D) Exothermic reaction
24. Which one of the following statement is incorrect?  
 (A) Salts are formed as a result of neutralization reaction  
 (B) All alkalies are bases, but all alkalies are not bases  
 (C) Acids are corrosive in nature  
 (D) Excess of CO<sub>2</sub> in the atmosphere can cause acid rain
25. Rust is  
 (A) Powdered iron (B) Ferrous Oxide  
 (C) Ferric Oxide (D) Hydrated Ferric Oxide

**BIOLOGY (Q No: 26 to 35)**

26. Oxygen is liberated during the process of  
 (A) Combustion (B) Photosynthesis  
 (C) Respiration (D) Fermentation
27. Study the diagram below and replaces **P, Q, R,** and **S** with following words.  
 a) From lungs  
 b) To rest of the body  
 c) From rest of the body  
 d) From the lungs

	<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>
<b>A</b>	<b>c</b>	<b>a</b>	<b>b</b>	<b>d</b>
<b>B</b>	<b>a</b>	<b>d</b>	<b>c</b>	<b>b</b>
<b>C</b>	<b>b</b>	<b>a</b>	<b>c</b>	<b>d</b>
<b>D</b>	<b>d</b>	<b>b</b>	<b>a</b>	<b>c</b>



28. In the axon, the nerve impulse travel  
(A) Towards the cell body      (B) Away from the cell body  
(C) Away from the synapse      (D) In both direction
29. A herbarium is  
(A) A garden with a collection of medicinal herbs  
(B) A garden with a varied collection of herbs  
(C) A collection of herbs in the dried form  
(D) A centre for the preservation of dried specimen of plants
30. The phloem tissues in plants transport  
(A) Nitrogen      (B) Carbon dioxide  
(C) Water      (D) Food
31. A food sample is taken in a test tube and few drops of Iodine were added to it. The solution turned blue black. This suggests that the food sample contain  
(A) Proteins      (B) Carbohydrates  
(C) Fats      (D) Vitamins
32. Step farming prevents  
(A) Soil erosion      (B) Afforestation  
(C) Deforestation      (D) All of these
33. Which of the following does not happen when we breathe in?  
(A) Air rushes into our lungs  
(B) Our ribs are raised  
(C) Our diaphragm is curved further upward  
(D) The volume of our chest increases
34. Select the correct order of transportation of water from soil to leaf of a plant.  
(A) Root, Root hair, Phloem, Leaf  
(B) Root hair, root, Xylem, Leaf  
(C) Root hair, Root, Leaf, Phloem  
(D) Root, Xylem, Phloem, Leaf

35. Which one of the following correctly defines pollination?
- (A) Shedding of pollen from anther
  - (B) Similar to fertilization of animals
  - (C) Transfer of pollen from anther to stigma
  - (D) Transfer of pollen from anther to ovule

**MATHEMATICS (Q No: 36 to 60)**

36. An angle is  $40^\circ$  less than 4 times of its complementary. The smaller angle is
- (A)  $16^\circ$
  - (B)  $26^\circ$
  - (C)  $24^\circ$
  - (D)  $36^\circ$
37. There are two circles such that the diameter of the first circle is equal to the radius of the second circle. The ratio of the area of first circle to that of second circle is
- (A) 1: 2
  - (B) 4 : 1
  - (C) 1 : 4
  - (D) 2 : 1
38. How many small cubes of 1.5cm side can be formed from a cube of 6cm side?
- (A) 8
  - (B) 9
  - (C) 16
  - (D) 64
39. The difference between a number and its three-fifth is 40. The number is
- (A) 100
  - (B) 120
  - (C) 80
  - (D) 90
40. The average age of three boys is 12 years. If their ages are in the ratio 2 : 3 :4, the age of the eldest boy is
- (A) 20 years
  - (B) 18 years
  - (C) 16 years
  - (D) 12 years
41. A train moving with a speed of 25m/s crosses a standing man in 16 seconds. What is the length of the train?
- (A) 250m
  - (B) 160m
  - (C) 400m
  - (D) 320m



**Questions 42 – 44:** The given table shows the Indian Parcel Postage Rates. Study the table carefully and answer the questions 42 to 44.

Indian Parcel Postage Rates		
Distance	Rate upto 2 Kg	For every additional Kg over 2 Kg
Local	Rs. 35	Rs. 5
Upto 500Km	Rs. 50	Rs. 8
501 Km to 1000 Km	Rs. 60	Rs. 12
1001Km to 2000Km	Rs. 70	Rs. 25
More than 2000Km	Rs. 90	Rs. 35

42. A parcel weighing 2 kg is to be sent from Bangalore to Mumbai, a distance of 1250Km. How much will it cost to send the parcel?
- (A) Rs. 60 (B) Rs. 70  
(C) Rs. 72 (D) Rs. 95
43. How much will it cost to send a parcel weighing 6Kg to a distance of 890km?
- (A) Rs. 50 (B) Rs. 60  
(C) Rs. 72 (D) Rs. 84
44. What will be the maximum weight of a parcel that can be send to a distance more than 2000km with Rs. 230?
- (A) 2 kg (B) 6 kg  
(C) 10kg (D) 12 kg
45. What is the maximum number of points of intersection of two circles that have unequal radii?
- (A) 3 (B) 2  
(C) 1 (D) Infinite
46. What is the radius of a circle of area  $616\text{cm}^2$ ?
- (A) 16cm (B) 12cm  
(C) 10cm (D) 14cm

47. What percentage of 1 day is 36 minutes?  
(A) 0.25% (B) 3.6%  
(C) 2.5% (D) 25%
48. How many numbers between 200 and 400 meet one or both of the conditions given in the two statements below?  
Statement-1: *The number begins with 3.*  
Statement-2: *The number ends with 3.*  
(A) 120 (B) 110  
(C) 100 (D) 80
49. When a big cube of 20cm side is divided into small cubes of 4cm side, then, how many such small cubes can be formed?  
(A) 216 (B) 64  
(C) 25 (D) 125
50. For every novel in a school library there are 2 science books; for each science book there are 7 history books. Express the ratio of history books to novels to science books in the school library as a triple ratio.  
(A) 14 : 1 : 2 (B) 14 : 2 : 1  
(C) 14 : 2 : 7 (D) 7 : 2 : 1
51. A school starts at 8:30am with school assembly which lasts for 15 minutes. There are 8 periods (classes) in a day and each period is of 35 minutes duration. After the first two periods there is break of 10 minutes.  
The fourth period of the school starts at  
(A) 10:40am (B) 10:30am  
(C) 10:45am (D) 10:25am
52. The diagram given below shows a number sequence.

**-17, -15, -12 m, -3, 3**

In the above sequence the value of “m” is

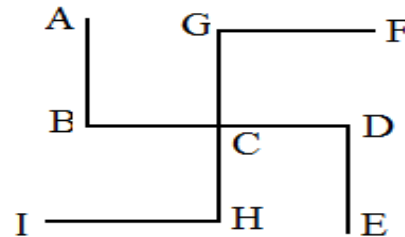
- (A) -9 (B) -10  
(C) -8 (D) -7

53. The number which is multiplied by  $(-8)^{-1}$  to obtain a product equal to  $10^{-1}$  is

- (A)  $\frac{-3}{5}$  (B)  $\frac{-4}{5}$   
 (C)  $\frac{-5}{4}$  (D)  $\frac{1}{5}$

54. In the figure given below,  $AB \parallel GH \parallel DE$  and  $GF \parallel BD \parallel HI$ , the measure of the angle  $FGC = 80^\circ$ . The measure of the angle  $CHI$  is

- (A)  $160^\circ$   
 (B)  $120^\circ$   
 (C)  $100^\circ$   
 (D)  $80^\circ$



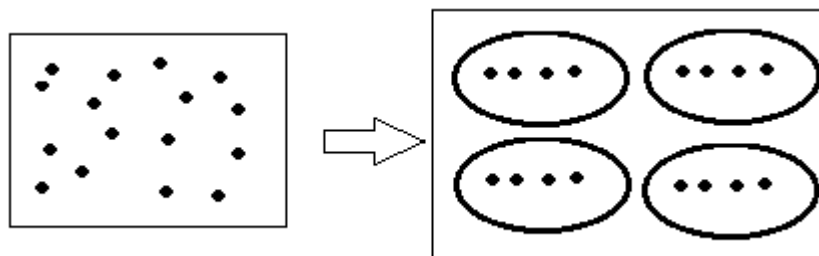
55. Which of the following statement is NOT CORRECT?

- (A) Every number is factor of itself  
 (B) Number of factors of a given number is finite  
 (C) Every multiple of a number is less than or equal to that number  
 (D) 4 and 15 are co-prime numbers

56. Three bells toll at intervals of 36 seconds, 40 seconds and 48 seconds respectively. They start ringing together at a particular time. They next toll together after

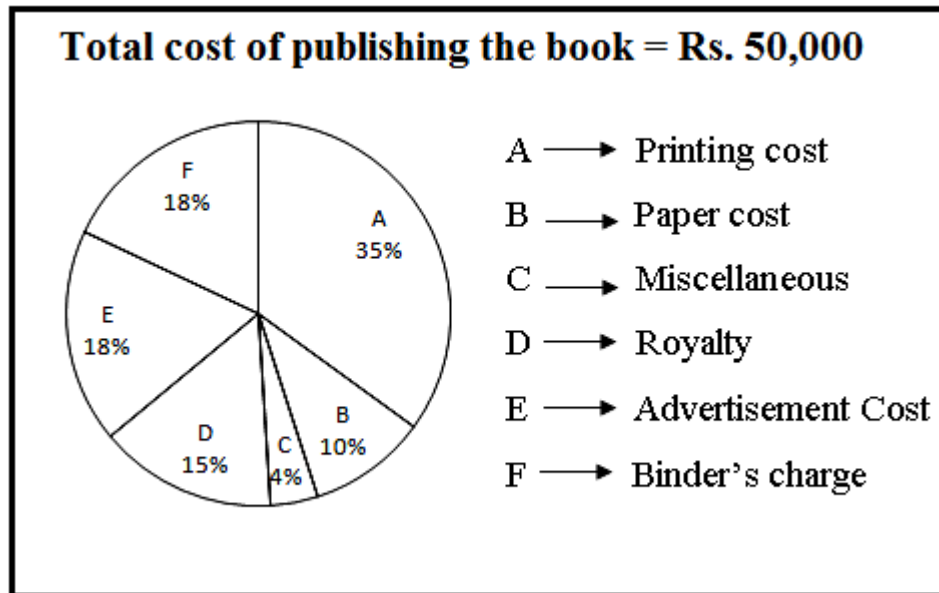
- (A) 6 minute (B) 12 minute  
 (C) 18 minute (D) 24 minute

57. Choose the correct expression represented by following figure



- (A)  $16 \div 16$  (B)  $16 \div 8$   
 (C)  $16 \div 4$  (D)  $16 \div 2$

**Questions 58 – 60:** The Pie – chart given below shows the overall cost of printing and publishing a book. Study the pie-chart and answer the questions that follow.



58. What is the printing cost of the book?  
(A) Rs. 17500      (B) Rs. 5000      (C) Rs. 9000      (D) Rs. 50000
59. What is the binding charge of the book?  
(A) Rs. 5000      (B) Rs. 7500      (C) Rs. 9000      (D) Rs. 2000
60. What is the difference between the Royalty and advertisement charge?  
(A) Rs. 7500      (B) Rs 9000      (C) Rs. 2000      (D) Rs. 1500

**SECTION: B**

61. What does the “search” option of start menu do?  
(A) Quickly opens recently worked documents  
(B) Finds the file or folder in the memory and gives its exact path  
(C) Allow to change the basic settings  
(D) Display all the files

62. Which one of the options given below is not a Web browser?  
(A) Netscape Navigator (B) NCSA Mosaic  
(C) Intra Netware (D) Netcom's Web Cruiser
63. Which one of the following has more memory capacity?  
(A) RAM (B) ROM (C) Floppy Disk (D) Hard Disk
64. When you are working in computer you want to go out for a long time. What should be done for the safety of computer?  
(A) Shut down computer through software only  
(B) Shut down the UPS but switch on the main power for charging UPS  
(C) Both A and B  
(D) Directly switch off UPS
65. Result displayed on the screen of monitor is called as:  
(A) Xerox Copy (B) Hard Copy  
(C) Soft Copy (D) Paper Copy

66. Which one of the following is not an input device?



(A)



(B)



(C)



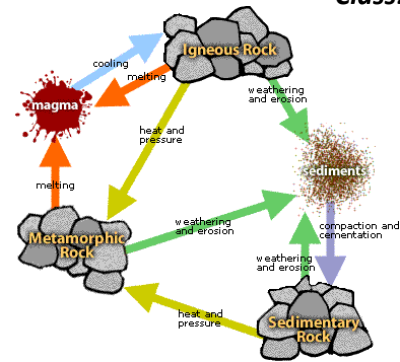
(D)

67. Memory unit is the part of  
(A) Input Device (B) Control Unit  
(C) Out Put Device (D) Central Processing
68. The Sun temple of Konark was built by Narasimhavarma I. Which dynasty did he belong to?  
(A) Somavansi dynasty (B) Ganga Dynasty  
(C) Suryavansi Dynasty (D) Kushana Dynasty

69. Who among the following is well known for his contribution in the field of Algebra?
- (A) Aryabhata (B) Brahmagupta  
(C) Bhaskara (D) Lalla
70. Who was the medieval responsible for introducing the silver coin called 'Tanka' in the North India?
- (A) Iltutmish (B) Sultana Raziya  
(C) Alauddin Khalji (D) Muhammad – bin – Tughlaque
71. The head of the military department under the central machinery of administration during Akbar's reign was?
- (A) Diwan (B) Mir Bakshi  
(C) Mir Saman (D) Bakshi
72. Who is considered as the father of 'White Revolution' in India?
- (A) Norman Borlaug (B) Vargheese Kurian  
(C) M S Swaminathan (D) VR Rao
73. 'Kasturba Gandhi Education scheme is related to:
- (A) Girls Education  
(B) Adult Education  
(C) Education among Tribal community  
(D) Rural education
74. Which country host 17<sup>th</sup> Asian Games in 2014
- (A) North Korea (B) South Korea  
(C) Japan (D) China
75. Who was the founder of Sayyid Dynasty?
- (A) Firoz Sha (B) Muhammad Sayyid  
(C) Khizr Khan (D) Ala - ud – din
76. During sultanate period which dynasty ruled longest period?
- (A) Khalji Dynasty (B) Tughluque Dynasty  
(C) Sayyid Dynasty (D) Slave Dynasty

77. The following diagram is best to explain

- (A) Rock formation
- (B) Rock Cycle
- (C) Structure of the rock
- (D) Three types of rocks



78. Observe the picture and give your answer. The figure given below shows

- (A) Estuary
- (B) Beach
- (C) Meanders
- (D) Valley



79. Read the passage and answer the following:

**As a form of Govt. democracy is different from the rule of king or a dictator. It stands for people's rule. People are involved in the formation of the Government, directly or indirectly through means of election. Government can't take decisions against people and that Government is always accountable to the people**

Which one of the following is a correct inference of above passage?

- (A) Democracy is an important form of Government.
- (B) In a Democracy people take decisions.
- (C) People are supreme in a democracy
- (D) Democratic Govt. is always accountable to the people

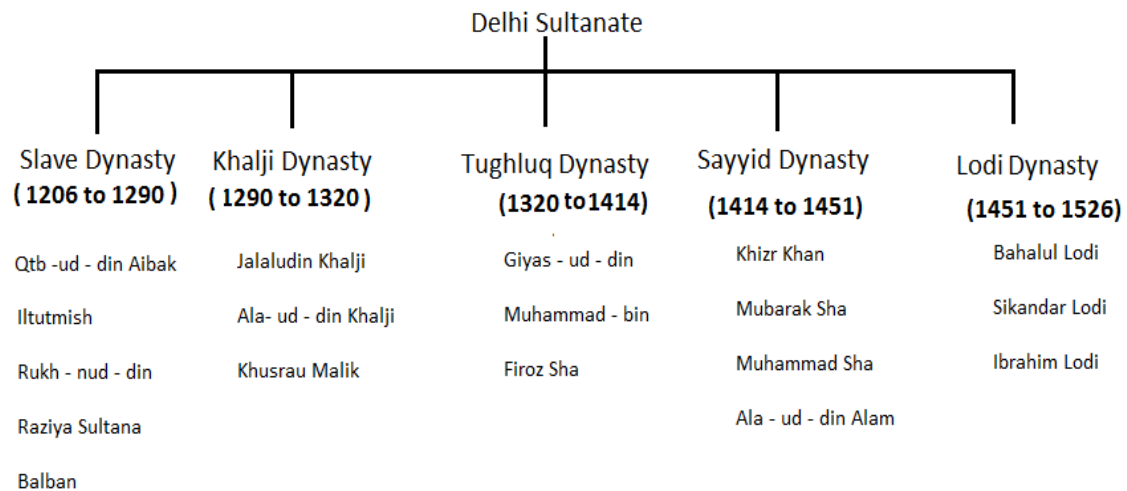
80. 2018 FIFA World will be held in:

- (A) Russia
- (B) Qatar
- (C) Brazil
- (D) Britain

81. In which one of the following games India secured a 'Gold Medal' in Asian Games 2014

- (A) Football
- (B) Hockey
- (C) Volleyball
- (D) Basket Ball

**Direction for question No 82 to 83:-** Study the diagram and answer the following:



82. Which battle marked the end of Sultanate Period?  
 (A) First Battle of Panipat (B) First Battle of Tarain  
 (C) Third Battle of Panipat (D) Second Battle of Tarain
83. Pathfinder, Rovers, Opportunity, Curiosity, and Maven are:  
 (A) US Mars Mission (B) US Spacecraft  
 (C) Moon Mission (D) None of these

**Direction for questions 84 and 85 :** Read the following passage and answer

The Indian national pledge was composed by Pydimarri Venkata Subba Rao, a native of Anneparthi village of Nalgonda district. Subbarao, a noted author in Telugu and a bureaucrat, composed the pledge while serving as the District Treasury Officer of Visakhapatnam District in 1962. The Pledge was introduced in many schools in 1963.

The Indian National Pledge is commonly recited by Indians at public events, during daily assemblies in all the Indian schools, and during the Independence Day and Republic Day commemoration ceremonies. Unlike the National Anthem or the National Song, whose authors are well known in India, P.V. Subbarao, the author of the pledge remains largely a little-known figure, his name being mentioned neither in the books nor in any documents. Records with the Human Resources Development Ministry of the Government of India however record Subbarao as the author of the pledge. Subbarao himself is thought to have been unaware of its status as the National Pledge with a position on par with the National Anthem and the National Song.

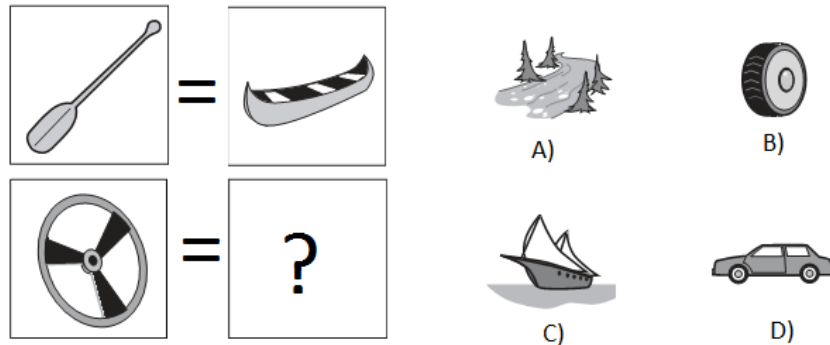


84. Who is the composer of Indian National pledge?  
 (A) Pydimarri Venkata Subba Rao (B) Jawaharlal Nehru  
 (C) Rabindranath Tagore (D) Bakim Chandra Chatterjee
85. In which year National Pledge of India was introduced in many schools?  
 (A) 1962 (B) 1963  
 (C) 1947 (D) 1950

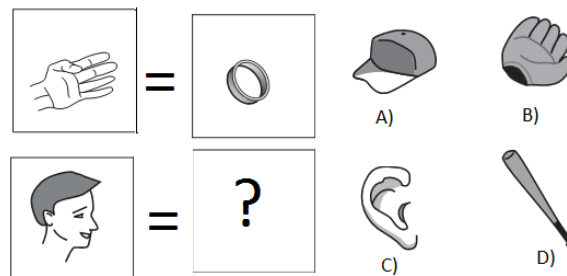
***Direction for questions No 86 to 88:- In each of the following question four words or letters have been given of which three are alike in some way and one is different. Choose out the odd one.***

86. (A) Everest (B) Vindhya, (C) Satpura (D) Western Ghat  
 87. (A) Hindi (B) Bengali (C) Tamil (D) Sinhala  
 88. (A) School (B) Chalk Board (C) Duster (D) Chalk

89. Replace the question mark



90. Replace the question mark



91. If 'A' means '+', 'B' means 'x', 'c' means '—' and 'D' means '÷' then:  
**1 2 B 8 C D 2 A 4 = ?**
- (A) 89 (B) 97  
(C) 84 (D) 90
92. 'AB' is related to 'ZY' in the same way 'CD' is related to
- (A) MN (B) WX  
(C) XW (D) YW
93. In certain code 'RISE' is written as '8419' and 'MEAL' is written as '5927'. How is 'RAIL' written in that code
- (A) 8429 (B) 8124  
(C) 8247 (D) 8412
94. Nithya is 9<sup>th</sup> from downwards in a class of 31 students. What will be her position from upwards?
- (A) 21<sup>st</sup> (B) 23<sup>rd</sup>  
(C) 22<sup>nd</sup> (D) 24<sup>th</sup>
95. If 'HEAR' is related to DEAF, SPEAK is related to:
- (A) Quiet (B) Silent  
(C) Mump (D) Dump
96. Which of the following will come in place of question mark?  
QPO SRQ UTS WVU ?
- (A) XVZ (B) ZYA  
(C) YXW (D) VWX
97. A doctor gives you three pills telling you to take one every half hour. How many minutes would the pills last?
- (A) 40mts. (B) 60mts.  
(C) 90mts (D) 20mts

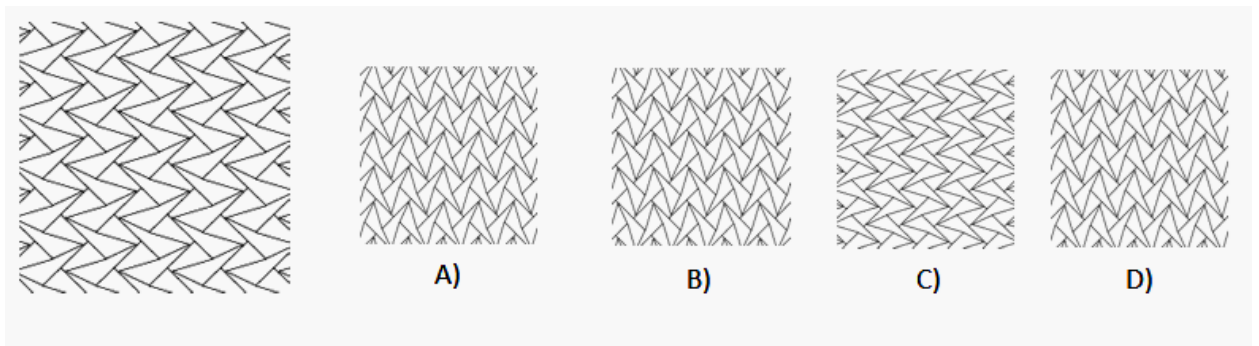
98. Take 1000 and add 40 to it. Now add another 1000. Now add 30. Add another 1000. Now add 20. Now add another 1000. Now add 10. What is the total?

- (A) 5000
- (B) 6000
- (C) 4100
- (D) 5100

99. Raju's father has five Sons: 1. Babu, 2. Sasi, 3. Nani, 4. Hritic. What is the name of the fifth daughter?

- (A) Babu
- (B) Hritic
- (C) Raju
- (D) Can't Say

100. If you rotate the above image 90° clockwise, it will look like which of the following images?



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**SPACE FOR ROUGH WORK**