IPEC EXPLORER METICULOUS TEST-2024

(Admission Cum Scholastic Aptitude Test)
For
CLASS-VI
(For VI to VII Moving Students)

Time : 3 Hrs.   **Maximum Marks : 360**

INSTRUCTIONS

1.   The booklet is your Question Paper. Do not break the seal of this booklet before being instructed to do so by the invigilator.

2.   Blank spaces and blank pages are provided in the question paper for your rough work. No additional sheets will be provided for rough work.

3.   Blank papers, clipboards, log tables, slide rules, calculators, cameras, cellular phones, pagers and electronic gadgets are **NOT** allowed inside the examination hall.

4.   The answer sheet, a machine-readable Optical Response Sheet **(ORS),** is provided separately.

5.   On breaking the seal of the booklet check that it contains **14** pages and all the **90** questions.

6.   A candidate has to write his / her answers in the ORS sheet by darkening the appropriate bubble with the help of **Black/Blue ball point pen** as the correct answer of the question attempted.

7.   **Question Paper Format :**

     This question paper consists of **5 Parts.**

     Part - I :   Mental Ability   20 Questions

     Part - II : Physics   20 Questions

     Part - III: Chemistry   - 20 Questions

     Part - IV : Mathematics   - 20 Questions

     Part - V : Biology   - 10 Questions

8.   **Marking Scheme :**

     Each question carries **+4 marks** for correct answer and **–1** for wrong answer.

PART -I [Mental Ability]

[SINGLE CORRECT TYPE]

Each question has four choices (A), (B), (C) and (D) out of which only one is correct.

Directions (Questions 1 - 2):
In each of the following questions, a number series is given with one term missing. Choose the correct alternative that will contiue the same pattern.

1. 15, 19, 25, 33, 43, ?
   (A) 65 　　　　　(B) 54 　　　　　(C) 55 　　　　　(D) 59

2. 7, 11, 20, 36, ? , 97, 146
   (A) 95 　　　　　(B) 94 　　　　　(C) 61 　　　　　(D) 99

Direction (Q.3 to 4): In the following letter series, some of the letters are missing which are given in that order as one of teh alternate below it. Choose the correct alternative.

3. pq_spq_ _pq_s_ _ rs
   (A) rpqrsq 　　　(B) rrrsqp 　　　(C) rrsrpq 　　　(D) rpsqpq

4. mn_rs_qrs_m_q_sn_r_t
   (A) qntrnsq 　　　(B) qntnrqs 　　　(C) ntqrnpq 　　　(D) ntnrqst

5. In a certain language 'DICTIONARY' is written as 'EHDSJNOZSX', then how is 'MEMORYLANE; written same language?
   (A) DNNNSXMZOD 　(B) NDNNXSZOMD 　(C) NDNNXSMZOD 　(D) NDNNSXXMZOD

6. In a certain language, 'MACHINE' is coded as 'CAMHENI', then how is 'COMPUTE' written in same language?
   (A) MCOPETU 　　(B) MOCEPTU 　　(C) MPEOCTU 　　(D) MOCPETU

Dirrectons (Q.7 to 8): The letter group in each of these questions is to be coded as per the following number codes.

Letters	Q	W	E	R	T	Y	U	I	O	P
Number	5	7	3	2	0	1	8	6	4	9

You have to find out which of the following correct code from the given letter group.

7. QRETY
   (A) 32526 　　　(B) 52301 　　　(C) 76420 　　　(D) None of these

8. TOPYU
   (A) 49740 　　　(B) 47632 　　　(C) 04918 　　　(D) None of these

(Space for rough work)

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Directions (Q.9 to 11): In each of the following questions, a number/letter series is given. One of the terms in the series is wrong. Identify the wrong term.

9. 3, 4, 7, 12, 18, 28
   (A) 7   (B) 12   (C) 18   (D) 28

10. 2, 3, 5, 7, 11, 15
    (A) 11   (B) 15   (C) 7   (D) 5

11. CX, EV, GT, IR, JP, MN
    (A) EV   (B) JP   (C) EMNEIDIC   (D) None of these

12. If in a certain code 'MOHAN' is coded as '51' and 'SOHAN' is coded as '57', then the code for 'ROHAN' is
    (A) 57   (B) 58   (C) 56   (D) None of these

13. If 'DIRECTOR' can be written as '491853201518', then how can 'DICTIONARY' be written?
    (A) 496206425797622   (B) 4960257625976
    (C) 493209151411825   (D) None of these

14. Patna : Bihar : : Trivandrum : ?
    (A) Kolkata   (B) Gujrat   (C) Kerala   (D) Sikkim

15. Water is to oxygen as Salt is to___
    (A) Iron   (B) Sodium   (C) Calcium   (D) Potassium

16. If $\times$ mens $-$, $+$ means $\div$, $-$ means $\times$ and $\div$ means $+$, then $15 - 2 \div 900 + 90 \times 100 = ?$
    (A) 190   (B) 60   (C) -60 (D) -180

17. If P means $+$, Q means $\times$, R means $-$ and S means $\div$, then 30 S 2 P 3 Q 6 R 5 = ?
    (A) 15   (B) 26   (C) 38   (D) None of these

18. If $+$ means $-$, $\times$ means $\div$, $\div$ means $+$ and $-$ means $\times$, then which of the following will be the value of the expression: $252 \times 9 - 5 + 32 + 92 = ?$
    (A) 95   (B) 168   (C) 192   (D) 200

19. If P stands for $+$, Q stands for $-$, R stands for $\times$, S stands for $\div$, then
    14 R 10 P 42 S 2 Q 8 = ?
    (A) 154   (B) 254   (C) 153   (D) 249

20. A is father of P and X is son of B. E is brother of A. If P is sister of X, then how is B related to E?
    (A) Brother   (B) Sister   (C) Sister-in-law   (D) Father

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PART - II [Physics]

[SINGLE CORRECT TYPE]

Each question has four choices (A), (B), (C) and (D) out of which only one is correct.

21.　The SI unit of mass is
　　(A) gram　　　　　　(B) kilogram　　　　(C) milligram　　　(D) pound

22.　The SI unit of time is
　　(A) minute　　　　　(B) second　　　　　(C) hour　　　　　(D) none of these

23.　Which of the following is the fastest mode of transport?
　　(A) Bicycle　　　　　(B) Car　　　　　　(C) Tonga　　　　(D) Aeroplane

24.　25 m =
　　(A) 2500 cm　　　　(B) 250 m　　　　　(C) 2.5 km　　　　(D) 25000 cm

25.　Discovery of _____ made the transport easy.
　　(A) fire　　　　　　(B) stone tools　　　(C) wheel　　　　(D) bullock cart

26.　Milk : volume : : Vegetables : ? : : Fever : Temperature.
　　(A) Area　　　　　　(B) Volume　　　　　(C) Length　　　　(D) Mass

27.　Length : Metre : : Area : ?
　　(A) m^3　　　　　　(B) m　　　　　　(C) m^2　　　　(D) none of these

28.　Length : Metre : : Mass : Kilogram : : Time : Second : ?
　　(A) Temperature : Celsius　　　　　(B) Temperature : Kelvin
　　(C) Temperature : Fahrenheit　　　　(D) None of these

29.　Which of the following terms means the change in position of an object with time?
　　(A) Stationary　　　(B) Fast　　　　　　(C) Slow　　　　　(D) Motion

30.　Which among the following is an artificial source of light?
　　(A) Star　　　　　　(B) Tube light　　　(C) Sun　　　　　(D) Firefly

31.　Substances which allow light to pass through them are called
　　(A) translucent　　　(B) opaque　　　　(C) transparent　　(D) all of these

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32. Shadows form because
    (A) light bends around an opaque object
    (B) light reflects through an opaque object
    (C) light travels in one direction from a source
    (D) light does not pass through an opaque object

33. A mirror is an example of
    (A) luminous object   (B) reflecting surface   (C) translucent object (D) none of these

34. Which of the following is non-luminous object?
    (A) Sun   (B) Candle   (C) Oil lamp   (D) Water

35. The position of the shadow shifts as the
    (A) position of the source shifts   (B) position of the object shifts
    (C) position of screen shifts   (D) both (A) and (B)

36. The image formed in a plane mirror is
    (A) straight and bright   (B) blurred and inverted
    (C) laterally inverted   (D) straight and blurred

37. Why can we not see lighted candle through a bent pipe?
    (A) Because bent pipe is made of opaque material.
    (B) Because of bent pipe, reflection of light does not occur.
    (C) Because light travels in a straight line.
    (D) Because we can only see through transparent material.

38. The paint behind a mirror
    (A) reflects the light incident on it   (B) protects the glass of the mirror
    (C) stops transmission of light through the mirror   (D) makes mirror attractive

39. Shadow formed by sunlight is longest
    (A) at noon   (B) at night   (C) in the morning   (D) none of these

40. A rider on horse falls back when horse starts running all of a sudden because
    (A) Acceleration of horse is less than that of rider
    (B) Rider is suddenly afraid of falling
    (C) Inertia of rest keeps the upper part of body at rest while lower part of the body moves forward with the horse
    (D) Inertia of motion keeps the upper part of body at rest while lower part of the body moves forward with the horse.

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PART - III [Chemistry]

[SINGLE CORRECT TYPE]

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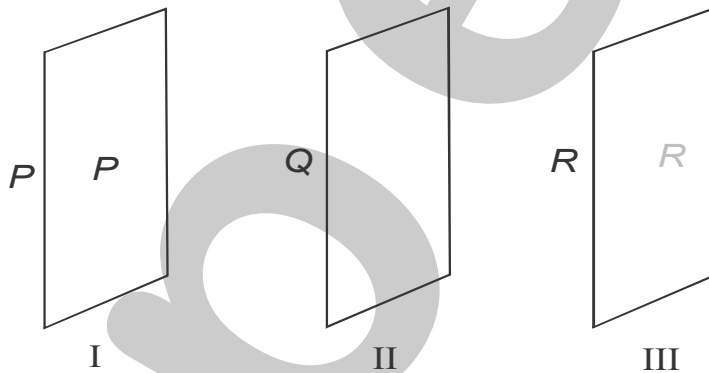
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41. Which of the following substances is bad conductor of heat and electricity ?

(A) Aluminium   (B) Plastic   (C) Iron nails   (D) Steel

42. Oil and paint when mixed with water

(A) sink in water   (B) float on water

(C) dissolve in water   (D) make a layer in the centre of water

43. Identify the correct statement.

(A) Salt and sugar are soluble in water whereas chalk and sand are insoluble.

(B) Substances that allow the passage of light are opaque.

(C) Substances which do not allow heat to pass through them easily are good conductors.

(D) Substances that do not regain their shape after removing the force are elastic

44. Mark the incorrect statement.

(A) Materials are grouped on the basis of similarities or dissimilarities in their properties.

(B) Water is a universal solvent

(C) Iron, copper and gold have lustre

(D) Pure water, alcohol and glass are translucent

45. The process of separating the insoluble and suspended solid particles of different sizes from a liquid with the help of a porous separator is known as

(A) filtration   (B) decantation   (C) evaporation   (D) sedimentation

46. Which of the following statements is not correct?

(A) Separation of a mixture is carried out to separate two useful substances.

(B) Separation of a mixture is carried out to separate harmful substances from useful one

(C) Separation of a mixture is carried out to purify a substance

(D) Separation of a mixture is carried out to separate two non-useful substances

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47. Immiscible liquids can be separated by the help of a

(A) beaker   (B) condenser   (C) separating funnel   (D) funnel

48. The appearance of Halley's comet after every year is a

(A) permanent change   (B) temporary change

(C) physical change   (D) periodic change

49. What is common among the following changes?

(i) blinking of traffic light   (ii) Motion of fan blades while rotating

(ii) Swinging of a pendulum   (iv) Striking of a clock every one hour

(A) They are all chemical changes   (B) They are all natural and periodic changes

(C) They are all man-made and periodic changes.

(D) They are all undesirable periodic changes

50. Pick out the physical changes from the following.

(A) Burning of magnesium wire   (B) Heating of iron rod

(C) Burning of coal   (D) Burning of wood

51. Two changes are stated below

(i) a piece of iron becomes red when heated strongly.

(ii) a piece of paper gives bright yellow flame when heated strongly.

Which of the above changes is a physical change?

(A) (i) only   (B) (ii) only   (C) Both (i) and (ii)   (D) Neither (i) nor (ii)

52. Which of the following statements is incorrect ?

(A) Jute is one of the cheapest natural fibres

(B) Knitting is another name for weaving

(C) Fibres are twisted to form yarn

(D) Man-made fibres are made from chemical substances

53. Early men used to cover their bodies by

(A) bark and leaves   (B) animal skin   (C) flax and cotton   (D) both (A) and (B)

(Space for rough work)

54. Which of the following fibres is/are obtained from fleece of certain animals?

(A) Wool and jute   (B) Silk and wool   (C) Cotton   (D) Wool

55. The process of arranging two sets of yarn together to form a fabric is called __(i)__ whereas the process in which a single yarn is used to make a piece of fabric is called __(ii)__.

Select the correct option for (i) and (ii).

	(i)	(ii)
(A)	Spinning	knitting
(B)	weaving	spinning
(C)	weaving	knitting
(D)	knitting	weaving

56. Coir is obtained from

(A) bolls of cotton plant   (B) stalk of coconut plant

(C) husk of coconut fruit   (D) stem of jute plant

57. Manu placed three different types of materials I, II and III in front of letters P, Q and R as shown in the figure and tried to look from the other side of each.
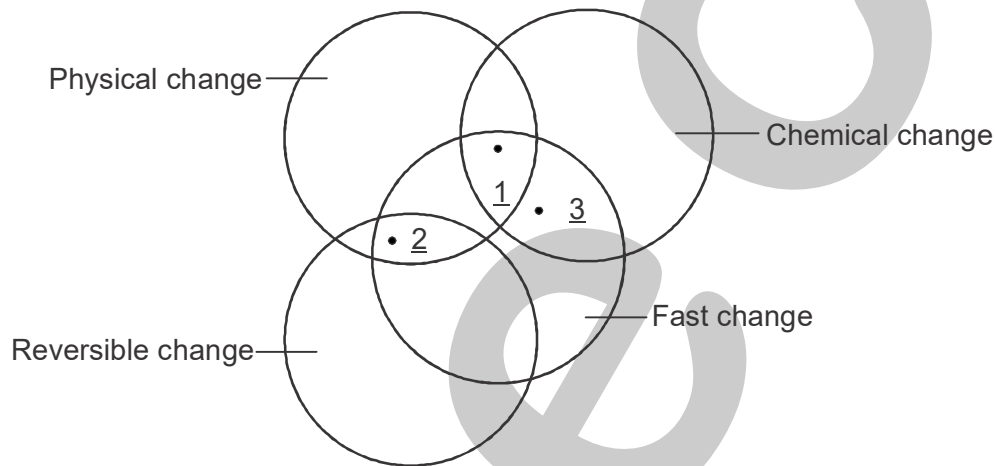

Which of the following is correct ?

(A) Material II is frosted glass   (B) Material I is glass window

(C) Material III is wooden door   (D) All of these

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58. Which of the following statements are incorrect?

I. Mixture of kidney beans and chick peas can be separated by winnowing

II. Salt from sea water can be obtained on a large scale by evaporation

III. An alloy is a homogeneous mixture of a metal with another metal or non-metals.

IV. Seeds of wheat can be separated from a bundle of wheat stalks by sieving

(A) II and III only   (B) I and IV only
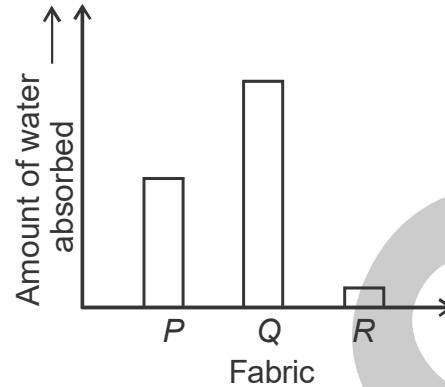
(C) I, III and IV only   (D) None of these

59. Study the given Venn diagram and fill in the blanks.

	1	**2**	**3**
(A)	Sharpening of pencil	Plastering of bone	Chlorination of water
(B)	Baking of corns	Drying of clothes	Digestion of food
(C)	Rancidity of food	Making lemonada	Weathering of rocks
(D)	Burning of LPG stove	Inflating a balloon	Combustion of kerosene

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60. Refer to the given graph plotted for three different fabric pieces of equal size P, Q and R on the basis of their water absorbing capacity and select the correct statement.
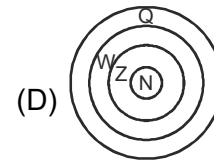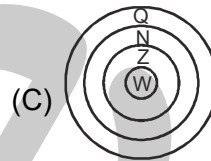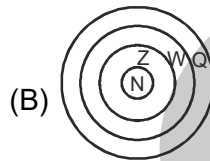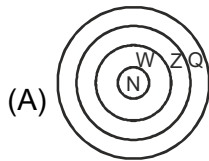

(A) P is made up of fibres obtained from *Gossypium* plant whereas R is made up of fibres obtained from an insect.

(B) Q is made up of protein fibres obtained from an insect whereas R is made up of cellulose fibres obtained from flower of a plant

(C) R is made up of fibres obtained from plant stem by the process of retting whereas P is made up of fibres obtained from plant seed by the process of ginning

(D) P is biodegradable whereas Q and R are non-biodegradable

_____
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PART - IV [Mathematics]

[SINGLE CORRECT TYPE]

Each question has four choices (A), (B), (C) and (D) out of which only one is correct.
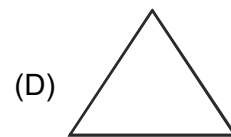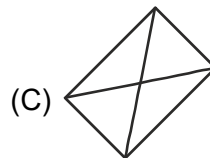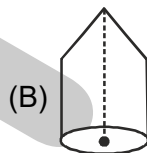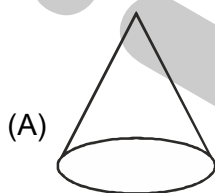
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61. The smallest sum of a prime number and whole number is
(A) 3   (B)2   (C)5   (D) 6

62. The sum of unit digits in 11^{2005} and $(2005)^{11}$ is
(A) 6   (B) 7   (C) 9   (D) 2

63. Find the value of 25 + m, where m is the non-positive and non negative integer
(A) 24   (B) 26   (C) 23   (D) 25

64. If N, W, Z, Q represents natural number, whole number, integers and rational number respectively, then which diagram is true?

(A)   (B)   (C)   (D)

65. In a right angled isoceles triangle, the sum of two smallest angles is
(A)120°   (B) 60o   (C)90o   (D) 130°

66. L.C.M. of 240 and 360 is
(A) 700   (B) 820   (C) 720   (D) 740

67. If the sum of three different prime numbers is 22 then what is the largest prime number
(A) 7   (B) 11   (C) 13   (D) 17

68. If HCF of 24 and 36 is K, then value of K/6 is
(A) 2   (B) 4   (C) 6   (D) 144

69. If the least number faces of a pyramid is the number of sides of a polygon then polygon is called
(A) quadrilateral   (B) Hexagone   (C)pentagone   (D) Decagonal

70. If the number of faces of a square pyramid is the numberof sidesof a polygon then polygon is called
(A) quadrilateral   (B) Hexagonal   (C) Pentagone   (D)Decagone

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(Space for rough work)

71. If $x - y = xy$, then value of $\left(\dfrac{1}{y} - \dfrac{1}{x}\right)^{1990}$

(A) 2000   (B) 3   (C) 1990   (D) 1

72. The smallest whole number which is divisible by 5

(A) 5   (B) 10   (C) 15   (D) 0

73. If the largest four digit number is added to smallest natuaral number then result is found 10. What is the value of n

(A) 3   (B) 5   (C) 6   (D) 4

74. Which of the following is a whole number

(A) $\dfrac{7}{8}$ (B) $\dfrac{4}{3}$ (C) $\dfrac{9}{4}$ (D) $\dfrac{12}{4}$

75. If one angle of an equilateral triangle is divided by 20°, then remainder is

(A) 15°   (B) 0°   (C) 10°   (D) 5°

76. If the sum of two consecutive natural number is 39. Find the number

(A) 40 and -1   (B) 16 and 23   (C) 50 and -11   (D) 20 and19

77. The remainder when sum of the number of sides of a pentagon and a hexagon is divided by the number of side of triangle is

(A) 2   (B) 1   (C) 3   (D) 0

78. In a acute angle triangle each angle is

(A) greater than 90°   (B) equal to 90°   (C) less than 90°   (D) greater than 120°

79. $\dfrac{15}{3}$ is a

(A) whole number   (B) Natural number   (C) both (A) and (B)   (D) None of these

80. Which geometrical shape is a triangular pyramid

(A)   (B)   (C)   (D)

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PART - V [Biology]

[SINGLE CORRECT TYPE]

Each question has four choices (A), (B), (C) and (D) out of which only one is correct.

81. The essential component of our food are called _____

    (A) Fats   (B) Nutrients   (C) Minerals   (D) Roughage

82. The disease caused by the deficiency of Iodine is _____

    (A) Anaemia   (B) Goitre   (C) Chicken Pox   (D) Influenza

83. Which of the fallowing is a protein source of plant origin?

    (A) Egg   (B) Soyabean   (C) Cheese   (D) Meat

84. Which of the following is a protective food ?

    (A) Milk   (B) Oils & Fats   (C) Fruits   (D) Cereals

85. Foods like Pizza, burgar & Noodles are rich in

    (A) Carbohydrate   (B) Vitamins   (C) Proteins   (D) Fats

86. _____ is essential for forming blood in human.

    (A) Calcium   (B) Iron   (C) Magnesium   (D) Phosphorus

87. The highest concentration of minerals are found in

    (A) Bones & Teath   (B) Skin   (C) Arms & Legs   (D) None

88. Nigh blindness is caused by the deficiency of

    (A) vit A   (B) vit C   (C) vit D   (D) vit B_1

89. Bendict's solution is used to test the presence of _____

    (A) Sugar   (B) Starch   (C) Fat   (D) Water

90. Rickets's is caused by the deficiency of _____

    (A) vit A   (B) vit C   (C) vit B_1 (D) vit D

(Space for rough work)

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