



**NATIONAL INFOTECH SEC. SCHOOL**

**+2 ENTRANCE EXAM -2079**

**SET - I**

**TIME: 2:15 Hrs.**

**FM: 100**

**Attempt all the question**

## **ENGLISH**

### **Read the text given below and choose the correct option.**

Despite the frustrating years of dragging children out of bed and persuading them to go to school, young children have an internal drive to learn about their world, and become industrious and productive individuals. Their educational eagerness and curiosity can either be stifled or encouraged by parents, teachers and other adults. Aware parents can encourage their children's development of important life skills. Besides teaching them to read and write, school and home environments teach children cooperation and interdependence. Children also engage in important play rituals (like playing with dolls or cops and robbers) which prepare them for adolescence and adulthood. Supportive parents can promote crucial learning of life skills. Above all, school-age children struggle with feelings of inferiority and incompetence when they compare themselves with their peers. If they don't fit in, they might feel insignificant. Loving and accepting parents' help these children develop the confidence to create a future where they can thrive and feel good about themselves.

**1. Most of young children have an internal drive:**

- |   |                               |
|---|-------------------------------|
| A. to learn the basics of fear          | C. to teach manners to others |
| B. to learn the fundamentals of English | D. to learn about their world |

**2. When the students compare themselves with their peers:**

- |                             |                                  |
|-----------------------------|----------------------------------|
| A. they feel inferiority    | C. they feel superiority         |
| B. they feel afraid of them | D. they notice something awkward |

**3. The role parents can play to help their children is by:**

- |                              |                              |
|------------------------------|------------------------------|
| A. punishing them            | C. loving and accepting them |
| B. providing them extra food | D. taking them to zoo daily  |

**4. Some games prepare the children for:**

- |                              |                      |
|------------------------------|----------------------|
| A. discipline                | C. character         |
| B. adolescence and adulthood | D. their superiority |

**5. The adjective form of 'promote' is:**

- |             |              |             |                |
|-------------|--------------|-------------|----------------|
| A. promoted | B. promotion | C. promoter | D. promotional |
|-------------|--------------|-------------|----------------|

**6. Budhibal Thapa, the only intrepid one, struggled barehanded with the beast. It means Budhibal Thapa is.....**

- |             |              |               |            |
|-------------|--------------|---------------|------------|
| A. Frighten | B. Masculine | C. Thoughtful | D. Fearful |
|-------------|--------------|---------------|------------|

**7. "To beat the air" means**

- |  |                       |
|--|-----------------------|
| A. To act foolishly                        | C. To move vigorously |
| B. To make efforts that is useless or vain | D. To move sluggishly |

**8. ....The owner and buyer finally agreed on a price for the house**

- |  |                                       |
|--|---------------------------------------|
| A. They had been bargain for several weeks | C. After bargaining for several weeks |
| B. As if bargaining for several weeks      | D. None of above                      |

**9. The passive of the sentence, "He will not speak a word." is:**

- |                                       |                                  |
|---------------------------------------|----------------------------------|
| A. A word will not be spoken by him   | C. No word will be spoken by him |
| B. A word will never be spoken by him | D. All of the above              |

**10. The principal and secretary.....highly impressed with overall progress of the students.**

- |         |        |        |         |
|---------|--------|--------|---------|
| A. were | B. was | C. are | D. been |
|---------|--------|--------|---------|

**11. That is the city ..... we will have to drive to reach the destination.**

- |             |             |                  |               |
|-------------|-------------|------------------|---------------|
| A. at which | B. of which | C. through which | D. from which |
|-------------|-------------|------------------|---------------|

12. The negative of this statement "Bibek had some money in his pocket" is

- A. Bibek did not have any money in his pocket
- B. Bibek did not have some money in his pocket.
- C. Bibek has have some money in his pocket
- D. Bibek had some money in his pocket

13. I am going to have my parents ..... a new house

- A. build
- B. to build
- C. built
- D. building

14. The indirect of this statement, Sunita said to Gopal, "You were my best friend" is:

- A. Sunita told Gopal that he had been her best friend
- B. Sunita told to Gopal that he had been her best friend
- C. Sunita told Gopal that she had been his best friend
- D. Sunita told Gopal that she was his best friend

15. He is grateful .....his teacher .

- A. to
- B. from
- C. of
- D. for

16. Which of the following is plural of the word 'locus'?

- A. locuses
- B. loci
- C. Locusses
- D. locis

17. The poem "The Road not Taken" is the ordonnance of

- A. William Wordsworth
- B. William Blake
- C. Robert Frost
- D. Robert Pattinson

18. Mrs. Kelly goes to ..... church every Sunday.

- A. a
- B. an
- C. the
- D. none

19. If I ..... his number, I would phone him

- A. know
- B. knew
- C. have known
- D. had known

20. I'd better phone Carol, ..... I?

- A. wouldn't
- B. hadn't
- C. would
- D. had

### **PHYSICS**

21. A body of mass 1 kg is accelerated by  $1.67 \text{ m/s}^2$  on lunar surface when drop from certain height. What will be acceleration produced by moon on a body of 6 kg?

- A.  $1.67 \text{ m/s}^2$
- B. less than  $1.67 \text{ m/s}^2$
- C. more than  $1.67 \text{ m/s}^2$
- D. data is incomplete

22. A body having mass 600 kg on earth surface. What will be its mass on lunar surface?

- A. 100 kg
- B. 400 kg
- C. 300 kg
- D. 600 kg

23. Which one of the following relation is not correct?

- A.  $g \propto m$
- B.  $g \propto \frac{1}{R}$
- C.  $g \propto \frac{1}{R^2}$
- D. All

24. During upstroke in an ordinary water pump

- A. piston valve remains open but foot valve is closed
- B. piston valve remains closed but foot valve is opened
- C. Both piston and foot valves are closed
- D. Both piston and foot valves are opened

- 25. An iceberg of density  $0.9 \text{ g/cm}^3$  is kept on water. Find out its percentage part outside the water?**  
 A. 10%                                      B. 90%                                      C. 40%                                      D. 60%
- 26. A ship can carry more load in sea in comparison to river because**  
 A. sea has more volume of water  
 B. sea is larger than river  
 C. of tides in sea  
 D. water in sea has more density than that of river
- 27. Which reaction is occurred in nuclear reactor?**  
 A. Nuclear fission                      B. Nuclear fusion                      C. Both A and B                      D. None
- 28. What amount of energy is produced during nuclear reaction by  $0.001 \text{ kg}$ ?**  
 A.  $0.003 \times 10^8 \text{ J}$                       B.  $0.03 \times 10^8 \text{ J}$                       C.  $3 \times 10^8 \text{ J}$                       D.  $0.06 \times 10^8 \text{ J}$
- 29. Natural source of geo-thermal energy is**  
 A. Fire in forest                      B. Earthquake                      C. Tsunami                      D. Volcanic eruption
- 30. In equation  $E=mc^2$ , m stands for**  
 A. mass of reactant                      C. gain mass during nuclear reaction  
 B. mass of product                      D. lost mass during nuclear reaction
- 31. Boiling point of water in Fahrenheit scale is**  
 A.  $32^\circ\text{F}$                       B.  $200^\circ\text{F}$                       C.  $180^\circ\text{F}$                       D.  $212^\circ\text{F}$
- 32. What amount of heat energy is required to increase temperature of  $3 \text{ kg}$  of water by  $10^\circ\text{C}$ ?**  
 A.  $1.26 \times 10^5 \text{ J}$                       B.  $1.26 \times 10^{-5} \text{ J}$                       C.  $1.36 \times 10^5 \text{ J}$                       D.  $1.36 \times 10^{-5} \text{ J}$
- 33. Two bodies are in thermal equilibrium. It means**  
 A. Both bodies have equal amount of heat energy.  
 B. Both bodies are at same temperature.  
 C. Both bodies have same specific heat capacity.  
 D. Both bodies have same thermal capacity.
- 34. Which one of the following relation is correct?**  
 A.  $r = f/2$                       B.  $r = f^2$                       C.  $r = f$                       D.  $r = 2f$
- 35. An object is kept in convex & concave lens in such a way that they formed virtual image only by looking image, how can you identify convex lens?**  
 A. Image will be diminished                      C. Image will be erect  
 B. Image will be magnified                      D. Image will be inverted
- 36. Image can be seen very clearly by a human eye, if image is formed on**  
 A. yellow spot of retina                      C. before retina  
 B. blind spot of retina                      D. after retina
- 37. Find out nature & focal length of a lens if it forms a virtual image at  $10 \text{ cm}$  of an object placed at  $4 \text{ cm}$  from lens.**  
 A. Concave lens of focal length  $6.66 \text{ cm}$ .                      C. Concave lens of focal length  $2.8 \text{ cm}$ .  
 B. Convex lens of focal length  $6.66 \text{ cm}$ .                      D. Convex lens of focal length  $2.8 \text{ cm}$ .

**38. An electrical appliance rated 60 W/220 V & another 100 W/220 V. Which one has more resistance?**

- A. 60 W/220 V  
B. 100 W/220 V  
C. Both have same resistance  
D. Not enough data

**39. Motor converts**

- A. Electric energy to kinetic energy.  
B. Electric energy to mechanical energy.  
C. Kinetic energy to electric energy.  
D. Mechanical energy to electric energy.

**40. Outer part of an electrical appliance is earthed. Why?**

- A. To decrease electric bill amount.  
B. To decrease length of electric wire.  
C. To increase brightness of light.  
D. To prevent from getting electric shock.

### **CHEMISTRY**

**41. Noble gases are kept in group**

- A. 15  
B. 16  
C. 17  
D. 18

**42. Isotope have different number of**

- A. electron  
B. proton  
C. Neutron  
D. All of above

**43. An element having electronic configuration of  $1s^2, 2s^2 2p^3$ . It means it is an element of**

- A. Element of 15<sup>th</sup> group and of 3<sup>rd</sup> period  
B. Element of 16<sup>th</sup> group and of 2<sup>nd</sup> period  
C. Element of 15<sup>th</sup> group and of 2<sup>nd</sup> period  
D. Element of 16<sup>th</sup> group and of 3<sup>rd</sup> period

**44. Chemical equation is balanced on the principle of**

- A. law of conservation of mass.  
B. law of conservation of energy.  
C. law of reciprocal proportion.  
D. law of variable proportion.

**45. What amount of oxygen is required for complete burning of 10g of carbon?**

- A. 26.66g of oxygen  
B. 16.66g of oxygen  
C. 36.66g of oxygen  
D. 6.66g of oxygen

**46. Which statement is false about catalyst?**

- A. It takes part in chemical reaction.  
B. It remains unchanged as a result of reaction.  
C. It alters rate of reaction.  
D. It doesn't take part in chemical reaction.

**47. Zypsum is added to cement to**

- A. Increase setting time.  
B. Decrease setting time.  
C. To make it light.  
D. To give strength

**48. Silk is a**

- A. Natural thread  
B. Artificial thread  
C. Synthetic thread  
D. Regenerate thread

**49. Which one of the following statement is correct about Soap?**

- A. It is non-biodegradable.  
B. It can produce foam even with hard water.  
C. It is sodium salt of fatty acid.  
D. It is an inorganic compound.

**50. Metallurgy stands for**

- A. Impurities present in ore of metal.  
B. Impurities present in mineral of metal.  
C. Extraction of metal from its minerals.  
D. Extraction of metal from its ore.

- 51. Which one of the following sequence about reactivity of metal is correct?**  
 A. Fe>Al>Cu>Ag>Au  
 B. Al>Fe>Cu>Ag>Au  
 C. Al>Cu>Fe>Ag>Au  
 D. Fe>Cu>Al>Ag>Au
- 52. Bauxite is an ore of**  
 A. Fe  
 B. Cu  
 C. Ag  
 D. Al
- 53. An organic compound is represent as R-O-R'. It means it is a/an**  
 A. Alcohol  
 B. Aldehyde  
 C. Carboxylic acid  
 D. ether
- 54. Common name of methane is**  
 A. Marsh gas  
 B. laughing gas  
 C. Tear gas  
 D. None.
- 55. Position of '-OH' in glucose is reversed on**  
 A. 1<sup>st</sup> Carbon atom  
 B. 2<sup>nd</sup> Carbon atom  
 C. 3<sup>rd</sup> Carbon atom  
 D. 4<sup>th</sup> Carbon atom
- 56. Molecular formula of Butane is**  
 A. C<sub>3</sub>H<sub>6</sub>  
 B. CH<sub>4</sub>  
 C. C<sub>4</sub>H<sub>10</sub>  
 D. C<sub>4</sub>H<sub>8</sub>
- 57. Which one of the following is not suitable indicator?**  
 A. Litmus Paper  
 B. Phenolphthalein  
 C. Methyl Orange  
 D. pH-value
- 58. Hydronium ion is released by**  
 A. Acid  
 B. Base  
 C. Salt  
 D. All of them
- 59. Acid found in human stomach is**  
 A. H<sub>2</sub>SO<sub>4</sub>  
 B. HNO<sub>3</sub>  
 C. HCl  
 D. H<sub>3</sub>PO<sub>4</sub>
- 60. Aqueous solution of Na<sub>2</sub>CO<sub>3</sub> can convert**  
 A. Red litmus paper to blue.  
 B. Blue litmus paper to red.  
 C. Neutral to all indicators.  
 D. Its P<sup>H</sup> value will be '7'

## **BIOLOGY**

- 61. Recessive character is not expressed in**  
 A. Parental generation  
 B. F<sub>2</sub> – generation  
 C. F<sub>1</sub> – generation  
 D. None
- 62. Two own brothers and sisters are not look alike because**  
 A. variation  
 B. heredity  
 C. mutation  
 D. crossing over
- 63. Which one of the following law is not applicable in monohybrid cross?**  
 A. Law of dominance  
 B. Law of segregation  
 C. Law of purity of gametes  
 D. Law of independent assortment
- 64. CSF is present around**  
 A. Heart  
 B. Brain  
 C. Spinal Cord  
 D. Both b & c
- 65. Hepatic portal vein carries**  
 A. Oxygenated blood from heart to lungs  
 B. Deoxygenated blood from heart to lungs  
 C. Oxygenated blood from gut to liver  
 D. Deoxygenated blood from gut to liver

- 66. Pulmonary veins open into**  
A. Right atrium                      B. Left atrium                      C. Right ventricle                      D. Left ventricle
- 67. Neutrophil is a type of**  
A. Erythrocyte                      B. Leucocyte                      C. Thrombocyte                      D. None
- 68. A female gets moustache, it means she is suffering from**  
A. Adrenal virilism                      B. Gynecomastia                      C. Cushing's disease                      D. Addison's disease
- 69. Absconding in honey bee stands for**  
A. Shifting of hive                      C. Nutrition of bee  
B. Separation of hive                      D. Flight for mating
- 70. Royal Jelly is food of**  
A. Queen bee                      B. Drone bee                      C. Worker bee                      D. All of them
- 71. Nissl's granule is present in**  
A. Muscular tissue                      C. Connective tissue  
B. Epithelial tissue                      D. Nervous tissue
- 72. Cortical part of cerebrum is of**  
A. Grey matter                      B. White matter                      C. Both a & b                      D. None
- 73. Unit of androecium is**  
A. Sepal                      B. Petal                      C. Stamen                      D. Pistil
- 74. In gamosepalous flower**  
A. Sepals are separated                      C. Petals are separated  
B. Sepals are fused                      D. Petals are fused
- 75. Which one of the following is not a part of human heart?**  
A. Interventricular Sulcus                      C. Interventricular Septum  
B. Superior Vena Cava                      D. Right Ventricle
- 76. According to binomial nomenclature, which one zoological name is written correctly?**  
A. Rana tigrina                      B. Rana Tigrina                      C. Rana tigrina                      D. Rana Tigrina
- 77. Thyroxine is secreted by**  
A. Pituitary gland                      B. Thyroid gland                      C. Adrenal gland                      D. Pancreas
- 78. Appearance of 6<sup>th</sup> finger is a**  
A. continuous variation                      C. Heredity  
B. Discontinuous variation                      D. All of above
- 79. The structure formed by fertilization between central cell and male gamete is called**  
A. Zygote                      B. Endosperm                      C. Oospore                      D. Spore
- 80. Transfer of pollen grains from anther to stigma of different flower but of same plant is called**  
A. self - pollination                      C. External fertilization  
B. cross - pollination                      D. Internal fertilization

## MATHS

81. If  $n(A) = 6$ ,  $n(B) = 5$ , what is the maximum value of  $n(A \cup B)$ ?

- A. 1                                      B. 6                                      C. 11                                      D. 5

82. If  $P$  be the sum,  $R$  be the rate of interest, and  $T$  be the time duration in years, the compounded amount half yearly

- A.  $P \left(1 + \frac{R}{200}\right)^{2T}$                                       C.  $P \left(1 + \frac{R}{100}\right)^{2T}$   
B.  $P \left(1 + \frac{R}{200}\right)^T$                                       D.  $P \left(1 - \frac{R}{200}\right)^{2T}$

83. If  $2 \text{ USD} = \text{Rs } 160$ ,  $\text{Rs } 240 = 2\text{£}$ , then  $4\text{£} = \dots\dots\dots\text{USD}$

- A. 6                                      B. 8                                      C. 4                                      D. 9

84. A solid sphere of radius ' $v$ ' has been cut into two equal halves. The total surface area of one half

- A.  $2\pi v^2$                                       B.  $4\pi v^2$                                       C.  $3\pi v^2$                                       D.  $\frac{3\pi v^2}{2}$

85. If  $H$  and  $L$  be the HCF and LCM of two expressions  $A$  and  $B$  respectively, then the relation of  $A$ ,  $B$ ,  $H$  and  $L$  is

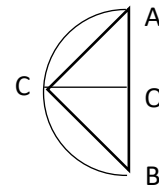
- A.  $A \times H = B \times L$                                       B.  $A \times L = B \times H$                                       C.  $A + B = H + L$                                       D.  $A \times B = H \times L$

86. If  $2^a 3^b 11^c = 2376$ , then the value of  $a+b+c$  is

- A. 8                                      B. 7                                      C. 6                                      D. 5

87. In the semi-circle given alongside,  $O$  is the centre. If  $OC = 5 \text{ cm}$  and  $BC = 6 \text{ cm}$  what is the length of  $AC$ ?

- A. 5 cm                                      C. 10 cm  
B. 6 cm                                      D. 8 cm



88. The difference of square of two consecutive odd numbers is 40. Then, the numbers

- A. 9 and 11                                      B. 7 and 5                                      C. 11 and 13                                      D. 23 and 25

89. If a dice is rolled and a coin is tossed at the same time, find the probability of occurring prime number on the dice and head on the coin

- A.  $\frac{3}{4}$                                       B.  $\frac{5}{6}$                                       C.  $\frac{1}{12}$                                       D.  $\frac{1}{4}$

90. If difference of mean and assumed mean  $(\bar{X} - A) = 20$  and  $\sum fd = 800$ , find the number of terms ( $N$ )

- A. 1600                                      B. 820                                      C. 40                                      D. 20

91. The value of  $\cos 72^\circ$  is

- A.  $\frac{-1-\sqrt{5}}{4}$                                       B.  $\frac{1+\sqrt{5}}{4}$                                       C.  $\frac{-1+\sqrt{5}}{4}$                                       D.  $\frac{-1-\sqrt{5}}{2}$

92. A plane cuts the right cone not passing through its vertex and semi-vertical angle is less than angle made by the plane to the axis of cone. Name the section so formed.

- A. Circle                                      B. Ellipse                                      C. Hyperbola                                      D. Parabola



93. If the circle  $x^2 + y^2 - 6x - by + 9 = 0$  passes through the point (3, 4), find the centre of the circle.
- A. (3, 2)                      B. (-3, -2)                      C. (2, 3)                      D. (-2, -3)
94. What is the angle between the lines  $x = 0$  and  $y = 0$ ?
- A.  $90^\circ$                       B.  $\infty$                       C.  $-90^\circ$                       D.  $0^\circ$
95. If  $\vec{i}$  is unit vector along x-axis, what is the value of  $\vec{i}^2$ ?
- A. 0                      B. 1                      C. -1                      D. 2
96. If the third term of a geometric series is 3, find the product of its first five terms.
- A. 27                      B. 81                      C. 32                      D. 243
97. Which range of the functions between f and g is equal to the range of the functions fog(x)?
- A. function f                      B. function g                      C. function fog                      D. function gof
98. If  $A = \begin{pmatrix} x & x \\ x & x \end{pmatrix}$  then, the value of  $A^3$  is
- A.  $\begin{pmatrix} x^3 & x^3 \\ x^3 & x^3 \end{pmatrix}$                       B.  $\begin{pmatrix} 3x^3 & 3x^3 \\ 3x^3 & 3x^3 \end{pmatrix}$                       C.  $\begin{pmatrix} 4x^3 & 4x^3 \\ 4x^3 & 4x^3 \end{pmatrix}$                       D.  $\begin{pmatrix} 3x^2 & 3x^2 \\ 3x^2 & 3x^2 \end{pmatrix}$
99. Find a 2 x 2 transformation matrix which transform a unit square to the parallelogram  $\begin{pmatrix} 0 & 3 & 4 & 1 \\ 0 & 0 & 1 & 1 \end{pmatrix}$ , then the matrix is
- A.  $\begin{pmatrix} 3 & 1 \\ 0 & 1 \end{pmatrix}$                       B.  $\begin{pmatrix} 1 & 3 \\ 0 & 1 \end{pmatrix}$                       C.  $\begin{pmatrix} 3 & 0 \\ 1 & 1 \end{pmatrix}$                       D.  $\begin{pmatrix} 0 & 3 \\ 1 & 1 \end{pmatrix}$
100. If  $X+Y = 3(P+Q)$ , which of the following is the arithmetic mean of X, Y, P and Q?
- A.  $3(P+Q)$                       B.  $(P+Q)$                       C.  $\frac{X+Y+P+Q}{4}$                       D.  $\frac{3(P+Q)}{4}$

