



National
Infotech College

+2 ENTRANCE EXAM 2082

SET-II

Attempt All the Questions

Full Marks : 100

Time : 2Hrs. 15 Minutes

ENGLISH

- 1. She bought ___ ewe from Mustang last week.**
a) a b) an c) the d) no article
- 2. By next year, he ___ in this company for 10 years.**
a) works b) will work c) will have worked d) worked
- 3. Everyone likes mangoes, ___?**
a) do they b) don't they c) doesn't she d) does he
- 4. The book ___ by the teacher.**
a) wrote b) is written c) is writing d) has write
- 5. They are watching a movie. (Choose passive)**
a) A movie is watched by them.
c) A movie watched them.
b) A movie is being watched by them.
d) A movie is watching them.
- 6. He said, "I am busy." (Indirect)**
a) He said that he is busy.
c) He says that he was busy.
b) He said that he was busy
d) He said that he busy.
- 7. She said to me, "Do you like music?" (Indirect)**
a) She asked me do I like music.
c) She told me if I liked music.
b) She asked me if I liked music.
d) She asked me if you liked music.
- 8. I met a woman ___ son is a doctor.**
a) who b) whose c) which d) whom
- 9. If I were rich, I ___ travel the world.**
a) will b) would c) can d) have
- 10. If he had seen me, he ___ stopped.**
a) will have b) would have c) would d) had
- 11. She is fond ___ music.**
a) of b) in c) about d) to
- 12. He walked ___ the river.**
a) to b) into c) along d) onto
- 13. She was made ___ the homework again.**
a) to do b) did c) doing d) do
- 14. She goes to school on time. Identify the object**
a) She b) goes c) school d) none of them
- 15. Choose the correct SVO structure.**
a) Reads she book b) She book reads c) She reads a book d) Reads a book she
- 16. Which of the following is a modern tool used in education?**
a) Chalkboard b) Blackboard c) Educational apps d) Maps and globes
- 17. What do modern schools focus more on today?**
a) Memorization b) Copying from books
c) Critical thinking and creativity d) Punishment and discipline
- 18. Why do some children still lack education?**
a) Because they dislike learnin
c) Due to poverty, war, or disasters
b) Because schools are boring
d) Because textbooks are hard

Reading Comprehension

Education is constantly evolving to meet the needs of modern society. In the past, students mainly learned in classrooms using chalkboards, textbooks, and face-to-face instruction. Today, technology has transformed how people learn. Online classes, educational apps, and digital tools are widely used in schools and homes. These innovations make learning more flexible and accessible, especially for students living in remote areas or those with physical challenges.

Another important change in education is the focus on creativity and critical thinking. Earlier systems often emphasized memorization, but now schools encourage students to solve problems, think independently, and work in teams. Teachers also play a more supportive role, guiding students rather than simply giving information.

Despite progress, challenges remain. Many children around the world still lack access to quality education because of poverty, war, or natural disasters. Gender inequality is also a serious issue in some regions, preventing girls from attending school. Governments and organizations are working together to improve education for all.

Education is not just about earning degrees; it helps people understand the world, make informed decisions, and live better lives. A well-educated population contributes to national development, peace, and progress. Therefore, improving education should be a priority for every country.

Multiple-Choice Question (MCQ)

16. What is the main purpose of the text?

- a) To describe the history of education
- b) To compare schools in different countries
- c) To highlight changes and challenges in education
- d) To promote online learning only

17. How does education help a country?

- a) By producing athletes
- b) By encouraging traveling
- c) By reducing food prices
- d) By supporting national development and peace

18. Which of the following is a modern tool used in education?

- a) Chalkboard
- b) Blackboard
- c) Maps and globes
- d) Educational apps

19. What do modern schools focus more on today?

- a) Memorization
- b) Copying from books
- c) Punishment and discipline
- d) Critical thinking and creativity

19. Why do some children still lack education?

- b) Because they dislike learning
- b) Because schools are boring
- c) Because textbooks are hard
- d) Due to poverty, war, or disasters

MATHS

21. In the given figure, PQRS is a square whose perimeter is 60 cm and M is the midpoint of QR. Then, the area of ΔMRN is

- a) $\frac{225}{2} \text{ cm}^2$
- b) $\frac{225}{4} \text{ cm}^2$
- c) 225 cm^2
- d) 450 cm^2

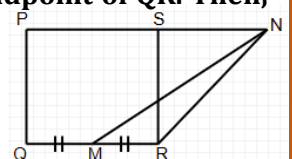


Fig: Q.no.21

22. In the adjoining figure, find the values of x and y.

- a) $140^\circ, 30^\circ$
- b) $140^\circ, 70^\circ$
- c) $35^\circ, 70^\circ$
- d) $140^\circ, 40^\circ$

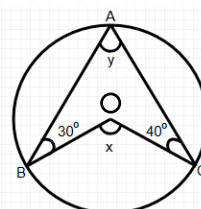


Fig: Q.no.22

23. If three hemi-spheres having radii r_1 , r_2 and r_3 are melted together to form a new hemi-sphere then, the radius of new hemi-sphere is
- a) $r = r_1 + r_2 + r_3$ b) $r = \sqrt{r_1^2 + r_2^2 + r_3^2}$
c) $r = \sqrt[3]{r_1^3 + r_2^3 + r_3^3}$ d) $r = r_1^3 + r_2^3 + r_3^3$
24. How many terms of the sequence -12, -9, -6, -3..... must be taken to make the sum 54?
- a) 14 b) 13 c) 12 d) 11
25. If $a^x \cdot a^{y+1} = a^7$ and $a^{2y} \cdot a^{3x+5} = a^{20}$. Then, the value of x^2y is
- a) 26 b) 27 c) 28 d) None
26. A number between 10 and 100 is three times the sum of its digits. If 45 is added to the number then digits are interchanged. Then, the number is
- a) 72 b) 62 c) 26 d) 27
27. A cricketer has a certain average in 9 innings. In the tenth innings, he scores 60 runs, which increases his overall average by 5 runs. What is his old average?
- a) 4 b) 6 c) 8 d) 10
28. The probability of solving a mathematical problem by Bidhya is $\frac{1}{3}$ and the probability of solving the same problem by Pravash is $\frac{1}{4}$. Then, the probability that none of them can solve the problem is
- a) $\frac{1}{2}$ b) $\frac{2}{3}$ c) $\frac{3}{4}$ d) None
29. If the function $f: A \rightarrow B$ is defined by $f = \{(-2, 4), (-1, 1), (0, 0), (1, 1), (2, 4)\}$. Then, the inverse of f is:
- a) $\{(4, -2), (1, -1), (0, 0), (1, 1), (4, 2)\}$
b) $\{(4, -2), (1, -1), (1, 1), (4, 2), (0, 0)\}$
c) $\{(-2, 4), (-1, 1), (0, 0), (1, 1), (2, 4)\}$
d) Does not exist
30. If a polynomial $p(x) = 2x^3 + 3x^2 + kx + 4$ leaves a remainder $2(4-k)$ when divided by $(x-2)$. Then, the value of k is
- a) 6 b) 2 c) -6 d) 5
31. The vertex of the parabola $y = ax^2 + bx + c$, $a \neq 0$ is
- a) $\left(\frac{-b}{2a}, \frac{-b^2}{4a}\right)$ b) $\left(\frac{-b}{2a}, \frac{b^2}{4a}\right)$ c) $\left(\frac{-b}{2a}, \frac{4ac-b^2}{4a}\right)$ d) $\left(\frac{-b}{2a}, \frac{4ac+b^2}{4a}\right)$
32. For what values of x , the matrix $\begin{bmatrix} 6 & 4 \\ x-1 & x \end{bmatrix}$ has no inverse?
- a) -2 b) $1/2$ c) $-1/2$ d) 2
33. If one end of the diameter of a circle $x^2 + y^2 - 7x - 4y + 13 = 0$ is (5, 3). Then, the coordinates of the other end of the diameter is
- a) $\left(\frac{7}{2}, 2\right)$, b) (2, 1) c) $\left(2, \frac{7}{2}\right)$ d) (1, 2)
34. The vectors $(\vec{p} + 2\vec{q})$ and $(5\vec{p} - 4\vec{q})$ are perpendicular to each other, where $\vec{p}$ and $\vec{q}$ are unit vectors. Then, the angle between $\vec{p}$ and $\vec{q}$ is
- a) 30° b) 60° c) 90° d) None

35. Which of the following matrix represents the rotation through $+90^\circ$ about origin?

- a) $\begin{bmatrix} 0 & 1 \\ 1 & 0 \end{bmatrix}$ b) $\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$ c) $\begin{bmatrix} 0 & -1 \\ 1 & 0 \end{bmatrix}$ d) $\begin{bmatrix} -1 & 0 \\ 0 & -1 \end{bmatrix}$

36. If the inversion of a point A (4, 4) with respect to a circle having center at origin is A' (8, 8). Then, the radius of the circle is

- a) 4 b) 6 c) 8 d) 16

37. If $\sin \theta + \cos \theta = \frac{1}{\sqrt{2}}$, ($0^\circ \leq \theta \leq 360^\circ$) then, the value of θ will be

- a) $45^\circ, 135^\circ$ b) $135^\circ, 315^\circ$ c) $105^\circ, 345^\circ$ d) None

38. The standard deviation of a set of observations is always

- a) 0 b) Positive c) Negative d) All of them

39. P and Q are subsets of universal set U. If the set Q is a subset of P. Then,

- a) $n(P \cup Q)$ has the minimum value b) $n(P \cup Q) = n(P)$ and $n(P \cap Q) = n(Q)$
c) $n(P \cap Q)$ has the maximum value d) All of them

40. The population of a city is increased from 8000 to 9261 in 3 years. Then, the rate of growth of the population is

- c) 2.1% b) 4% c) 5% d) 3.5%

CHEMISTRY

41. Dry ice is

- a) Solid form of CO_2 at -98°C b) Solid form of CO_2 at -78°C
c) Solid form of NH_3 at -78°C d) Solid form of NH_3 at -98°C

42. Which one of the following compounds can be used to neutralize acidity of human stomach?

- a) NaOH b) HCl c) $\text{Mg}(\text{OH})_2$ d) H_2SO_4

43. Anode is

- a) Negatively charged electrode b) Positively charged electrode
c) Charge less electrode d) None

44. What will form if CO_2 is treated with NH_3 under high temperature and high pressure?

- a) Ammonium carbonate b) Urea and Water
c) Ammonium carbonate and water d) They don't react together

45. Metallurgy stands for

- a) Allergy from a metal b) Extraction of metals from their own ores
c) Study of properties of metal d) All of above

46. Which one of the following is the largest group in modern periodic table?

- a) 1 b) 7 c) 5 d) 3

47. Which one of the following element was named 'Eka-Aluminium' by Mendeleev?

- a) Germanium b) Gallium c) Vanadium d) Chromium

48. Which one of the following compounds can be used for blue printing of map?

- a) Carbon dioxide b) Ammonium hydroxide c) Blue vitriol d) Ammonia

49. Which of the following process can be done to convert carbonate ores to their oxide?

- a) Roasting b) Calcination c) Smelting d) Reduction

50. -CHO is a functional group of

- a) Ether b) Ketone c) Carboxylic acid d) Aldehyde

Fig: Q.no.51

65. A dog sleeps in a bowl shaped position in winter season because

- a) To provide less contact area to atmosphere to decrease rate of exchange of heat
- b) It makes all organs in contact for exchange of heat
- c) To occupy less space
- d) It closed its eyes, nose & mouth to prevent from entry of air

66. A fluid can exert up thrust but a solid can't because

- a) Molecules of solid are tightly packed but not of fluid.
- b) Solid can exert force in all direction but fluid can only downward.
- c) Fluid can exert force in all direction but solid can only in downward.
- d) A fluid can exert force only in upward direction.

67. Frost bite is occurred in mountain climber because of

- a) High specific heat capacity of water
- b) Anomalous expansion of water
- c) Very low pressure of atmosphere
- d) Increase in altitude

68. A stone is dropped from a tower of 80 m height. After 1 second of 1st stone, 2nd stone is thrown from same tower to make them strike the ground at same time. What should be the initial velocity of 2nd stone in order to make both stones strike the ground simultaneously?

- a) 10 m/s
- b) 12.6 m/s
- c) 13 m/s
- d) 11.6 m/s

69. Find out the amount of heat energy required to boil 500 gram of water at 30°C.

- a) $1.47 \times 10^5 \text{ J}$
- b) $1.47 \times 10^{-10} \text{ J}$
- c) $1.47 \times 10^{-5} \text{ J}$
- d) $1.47 \times 10^{10} \text{ J}$

70. Specific heat capacity of a substance depends on which of the following?

- a) Nature of the substance
- b) Volume of the substance
- b) Temperature of the substance
- d) Mass of substance

71. An object is placed near by two different types of lenses 'A' and 'B'. A student observes the image formed in lens 'A' is erect and magnified but the image formed in lens 'B' is erect and diminished. Which of the following statement is true about the observations?

- a) Information is not enough to know nature of lenses
- b) 'A' is concave lens and 'B' is convex in which object is kept at F
- c) 'A' is convex lens and object is kept between 'F' and 'O' but 'B' is concave lens.
- d) 'A' is concave lens and 'B' is convex lens

72. The mass of Planet 'B' is twice the mass of Planet 'A' but its radius is half of the radius of Planet 'A'. Similarly, the mass of Planet 'C' is half the mass of Planet 'A' but its radius is twice the radius of Planet 'A'. If the weights of an object in Planets A, B & C are W_1 , W_2 & W_3 respectively, which of the following order is correct?

- a) $W_1 > W_3 > W_2$
- b) $W_1 > W_2 > W_3$
- c) $W_2 > W_3 > W_1$
- d) $W_2 > W_1 > W_3$

73. The force of gravitation between two bodies on earth is 120 N. What will be gravitational force between them on lunar surface if distance between them remains same?
- a) 120 N b) 60 N c) 80 N d) 20 N
74. Which one of the following phenomenon is not occurred in the formation of rainbow?
- a) Dispersion of light b) Refraction of light
c) Reflection of light d) Total internal reflection
75. A student wants to form image at the distance of 10 cm of an object placed at 20 cm. Which one of the following options can be chose by him to get image as required?
- a) Either convex lens of focal length 6.66 cm or concave lens of focal length 20 cm.
b) Either convex lens of focal length 20 cm or concave lens of focal length 6.66 cm.
c) Only by convex lens.
d) Only by concave lens.
76. The converging power of cornea of a healthy adult person is
- a) 37 D b) 63 D c) 43 D d) 55 D
77. What is the unit of refractive index?
- a) m/s b) Hertz c) Candela d) No unit
78. A student finds a transformer of which ratio of input voltage to output voltage is 4:5. What should be the ratio of its primary coil to secondary coil?
- a) 4:5 b) 5:4 c) 6:5 d) 5:6
79. Potential determines the
- a) Direction of field intensity b) Magnitude of field intensity
c) Direction of flow of electric charge d) Types of current
80. Which one of the following factor doesn't affect strength of induced current?
- a) Distance between magnet and coil c) Strength of magnet
c) Speed of rotation of armature d) Material of magnet

BIOLOGY

81. Which one of the following blood vessels can be taken as a graft in by-pass surgery?
- a) Renal vein b) Hepatic vein c) Saphenous vein d) Hepatic artery
82. The function of mitral valve is
- a) To prevent flow of blood from left ventricle to left atrium.
b) To prevent flow of blood from right ventricle to right atrium.
c) To allow flow of blood from left atrium to left ventricle.
d) To allow flow of blood from right atrium to right ventricle.
83. How many types of genotypically plants are produced in F_1 generation of monohybrid cross?
- a) 1 b) 2 c) 3 d) 4
84. A patient of hyperuricemia is adviced to take cherry in every diet because
- a) It contains chlorophyll b) It contains anthocyanin
c) It contains anthoxanthin d) It contains anthomyosin
85. Identify the given blood cell in figure:
- a) Monocyte b) Lymphocyte
c) Neutrophil d) Basophil



Fig: Q.no.85

86. In chickenpox, neem powder paste is applied to the affected parts and neem leaves are spread on the bed. It helps to heal chickenpox. What property in neem helps to do so?

- a) Anti-inflammatory property
- b) Anti-microbial property
- c) Anti-oxidant property
- d) Anti-pyretic property

87. Blood sugar level can be decreased because of excessive use of

- a) Gurjo
- b) Turmeric
- c) Calamus
- d) Asuro

88. A person has neither antigen nor RH-factor. It means its blood group is

- a) AB +ve
- b) AB -ve
- c) O -ve
- d) O +ve

89. Which one of the following is true fish?

- a) Star fish
- b) Devil fish
- c) Jelly fish
- d) Sea-horse

90. Which one of the following is written correctly?

- a) Homo sapiens
- b) Homo sapiens
- c) Homo sapiens
- d) homo sapiens

91. Which one of the following characteristics of Pteridophyte is different from other non-flowering plants?

- a) Presence of chlorophyll
- b) Having thallus body
- c) Presence of vascular bundle
- d) Absence of cell wall

92. Which one of the following castes of Honey Bee doesn't have father but have grandfather?

- a) Queen Bee
- b) Worker Bee
- c) Drone Bee
- d) All of the above

93. Melittology stand for

- a) Study of apis
- b) Study of arthropods
- c) Study of silk worm
- d) Study of insect

94. Worker bee works as a nurse at the age of

- a) 1-3 Days
- b) 4-6 Days
- c) 7-11 Days
- d) 12-17 Days

95. Which one of the following sub-phylum is not considered as Protochordates?

- a) Hemichordata
- b) Urochordata
- c) Cephalochordata
- d) Vertebrata

96. Why are club mosses more advanced than the mosses?

- a) Xylem and Phloem tissue are found in club moss
- b) Club moss grows on the land
- c) Club moss is sporophyte
- d) Sporophyte is dominant in alternation of generation

97. Which one of the following is a structural unit of DNA?

- a) Nucleotide
- b) Nucleoside
- c) Gene
- d) Chromatid

98. Name the scientist and domestic animals on which experiment of artificial insemination was done successfully.

- a) Darwin and Horse
- b) Spallanzani and Dog
- c) Mendel and Pea
- d) Lamarck and Giraffe

99. If there is no DNA transcription in a cell, which process is affected?

- a) Cell division
- b) Protein synthesis
- c) Sexual reproduction
- d) Photosynthesis

100. In IVF, IV stands for

- a) Intrinsic value
- b) Internal Value
- c) Glass
- d) International Value