FUTURE BHUBANESWAR SCHOOL

FBS ASSESSMENT CUM SCHOLARSHIP TEST(FAST)
SAMPLE QUESTION PAPER
FOR XI - (2025-26)
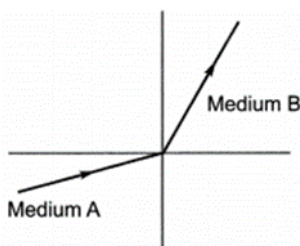
General Instructions:
- ✓ There are **50 questions** in all. All questions are compulsory.
- ✓ This question paper has five sections: Section A, Section B, Section C, Section D and Section E. All the sections are compulsory.
- ✓ **Section A** contains 10 MCQs of **Physics**.
- ✓ **Section B** contains 10 MCQs of **Chemistry.**
- ✓ **Section C** contains 10 MCQs of **Biology**.
- ✓ **Section D** contains 10 MCQs of **Mathematics**.
- ✓ **Section E** contains 10 MCQs of **Mental ability**.
- ✓ Each Question carries *2 marks*.

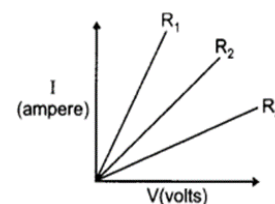**Maximum Marks: 100 Marks**   **Time Allowed: 1.5 Hour**

SECTION-A (PHYSICS)

1. A light ray enters from medium A to medium B as shown in figure. The refractive index of medium B relative to A will be

   a. Greater than unity
   b. Equal to unity
   c. Less than unity
   d. Zero

2. A person is unable to see object distinctly placed within 50 cm from his eyes. Find the power of the lens to correct this defect.
   a. + 2 D   b. - 2D   c. + 4D   d. - 4D

3. A convex mirror of radius 15 cm is placed in water. It's focal length in air and water differ by
   a. 15   b. 20   c. 30   d. 0

4. Which of the following statements is correct regarding the propagation of light of different colours of white light in air?
   a. Red light moves fastest.
   b. Blue light moves faster than green light.
   c. All the colours of the white light move with the same speed.
   d. Yellow light moves with the mean speed as that of the red and the violet light.

5. Unit of electric current is
   a. Ampere
   b. Watt
   c. Coulomb
   d. None of these

6. The magnetic lines of force, inside a current carrying solenoid, are
   a. Along the axis and are parallel to each other
   b. Perpendicular to the axis and equidistance from each other
   c. Circular and they do not intersect each other
   d. Circular at the ends but they are parallel to the axis inside the solenoid.

7. A student carries out an experiment and plots the V-I graph of three samples of nichrome wire with resistances R_1, R_2 and R_3 respectively. Which of the following is true?

   a. $R_1 = R_2 = R_3$
   b. $R_1 > R_2 > R_3$
   c. $R_3 > R_2 > R_1$
   d. $R_2 > R_3 > R_1$

8. The element used almost exclusively for filaments of incandescent lamps
   a. Copper
   b. Silver
   c. Gold
   d. Tungsten

9. Inside the magnet, the field lines moves
   a. From north to south
   b. Away from south pole
   c. From south the north
   d. Away from north pole

10. What type of image is formed by the eye lens on the retina?
    a. Real and erect
    b. Real and inverted
    c. Virtual and inverted
    d. Virtual and erect

SECTION-B (CHEMISTRY)

1. Give the ratio in which hydrogen and oxygen are present in water by volume.
   a. 1:2   b. 1:1   c. 2:1   d. 1:8

2. A researcher adds barium hydroxide to hydrochloric acid to form a white-colored barium chloride. Which option gives the balanced chemical equation of the reaction?
   a. $HCl + Ba(OH)_2 \rightarrow BaCl_2 + 2HOH$
   b. $2HCl + Ba(OH)_2 \rightarrow BaCl_2 + 2HOH$
   c. $2HCl + Ba(OH)_2 \rightarrow BaH_2 + 2HCl + O_2$
   d. $HCl + 2Ba(OH) \rightarrow 2BaCl_2 + 2HOH + O_2$

3. Oxidation is a process which involves
   a. Addition of oxygen
   b. Removal of oxygen
   c. Addition of hydrogen
   d. Removal of hydrogen

4. The PH of which of the following is more than 7?
   a. Gastric juice
   b. Vinegar
   c. Blood plasma
   d. Lemon juice

5. $Na_2CO_3 . 10H_2O$ is
   a. Washing soda
   b. Baking soda
   c. Bleaching powder
   d. Tartaric acid

6. Alkalis are
   a. Acids, which are soluble in water
   b. Acids, which are insoluble in water
   c. Bases, which are insoluble in water
   d. Bases, which are soluble in water

7. Which property of metals is used for making bells and strings of musical instruments like Sitar and Violin?
   a. Sonorousness
   b. Malleability
   c. Ductility
   d. Conductivity

8. Non-metals form covalent chlorides because
   a. They can give electrons to chlorine
   b. They can share electrons with chlorine
   c. They can give electrons to chlorine atoms to form chloride ions

d. They cannot share electrons with chlorine atoms

9. The electronic configuration of carbon is found to be 2, 4. How many bonds can one carbon atom form in a compound?
   a. 1   b. 2   c. 4   d. 6

10. A carbon compound contains two atoms of carbon. Which name should the carbon compound bear?
    a. Butane   b. Ethane   c. Methane   d. Propane

SECTION-C (BIOLOGY)

1. Proteins after digestion are converted into.
   a. Carbohydrates   c. Small globules
   b. Amino acids   d. Starch

2. Opening and closing of pores is a function performed by.
   a. Stomata   c. Chlorophyll
   b. Chloroplast   d. Guard cells

3. Which of the following is a biodegradable substance?
   a. Glass   b. Plants   c. Plastics   d. Polythene

4. Which of the following is an example of herbivores?
   a. Cow   b. Shark   c. Lion   d. Tiger

5. When an animal is cut into pieces and each piece grows into a complex organism. What is the process?
   a. Budding   c. Fragmentation
   b. Spore formation   d. Regeneration

6. Where does fertilization occur in human females?
   a. Uterus   b. Cervix   c. Oviduct   d. None of these

7. What is the probability that the male progeny will be a boy?
   a. 50%   b. 56%   c. 47.43%   d. It varies.

8. In peas, a pure tall (TT) is crossed with a pure short plant(tt). The ratio of pure tall plants to pure short plants in the F2 generation is:
   a. 1:3   b. 3:1   c. 1:1   d. 2:1

9. How will information travel within a neuron?
   a. Dendrite → cell body → axon → nerve ending
   b. Dendrite → axon → cell body → nerve ending
   c. Axon → dendrite → cell body → nerve ending
   d. Axon → cell body → dendrite → nerve ending

10. Roots of plants are:
    a. Positively geotropic   c. Positively phototropic
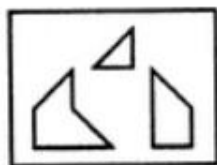   b. Negatively geotropic   d. None of these

SECTION-D (MATHEMATICS)

1. The largest number which divides 615 and 963 leaving remainder 6 in each case is _____.
   a. 82   b. 95   c.87   d. 93

2. If p and q are primes then HCF of and is _____.
   a. p   b. q   c. p+q   d. pq

3. The graph of a quadratic polynomial is _____.
   a. Straight line   b. Circles   c. Ellipse   d. Parabola

4. If a pair of linear equations is consistent, then the lines will be
   a. Always intersecting
   b. Always parallel
   c. Always coincidence
   d. Intersecting or coincidence

5. What is the common difference of an AP in which $a_{18} - a_{14} = 32$?
   a. 8
   b. -8
   c. -4
   d. 4

6. The number of terms in 2, 5, 8… 59 is:
   a. 12
   b. 19
   c. 20
   d. 25

7. The quadratic equation $2x^2 - \sqrt{5}x + 1 = 0$ has
   a. Two distinct real roots
   b. two equal real roots
   c. No real roots
   d. more than 2 real roots

8. The roots of $100x^2 - 20x + 1 = 0$ is _____.
   a. 1/20 and 1/20
   b. 1/10 and 1/20
   c. 1/10 and 1/10
   d. None of the above

9. If the angle between two radii of a circle is 110º, then the angle between the tangents at the ends of the radii is_____.
   a. 90^0
   b. 70^0
   c. 50^0
   d. 35^0

10. A line intersecting a circle in two points is called a _____.
    a. Diameter
    b. Tangent
    c. Chord
    d. Secant

SECTION-E (MENTAL ABILITY)

1. 16, 31, 64, 125, 254, ?
   a. 506
   b. 503
   c. 513
   d. 363

2. Find out the missing term for the following series. UX   OC   IH   EM ?
   a. AR
   b. AP
   c. ZR
   d. ZP

3. In a certain code JEALOUS is written as BFKKTVP. How is PASSION written in that code?
   a. BTQROJTQ
   c. TBQROPJ
   b. QBSSJMN
   d. BTROJTQ

4. X introduces Y saying, "the brother of his father is the father of my sister". Then how X is related to Y?
   a. Brother
   c. Cousin
   b. Sister
   d. Nephew

5. A is brother of E, who is father of C. D is mother of K, who is mother of H. C is brother of H. Then how E is related to D?
   a. Father-in-law
   c. Son
   b. Son-in-law
   d. Nephew

6. Find out which of the figures (1), (2), (3) and (4) can be formed from the pieces given in figure (X).

(X)   (1)   (2)   (3)   (4)

   a. 1
   b. 2
   c. 3
   d. 4

7.

12	10	26
24	15	?
30	20	55

    a. 38   b. 42   c. 46   d. 48

8. Choose the alternative which is closely resembles the mirror image of the given combination.

ANS43Q12
(1) ANƧ4ƐϘ1S   (2) S1Ϙ34ƧИА
(3) ƧИАƐ4ϘS1   (4) 1SϘ34АИƧ

    a. 1   b. 2   c. 3   d. 4

9. One day at the time of sunrise me and my cousin were talking to each other face to face. If my shadow was exactly to my cousin's left side, then in which direction was I facing?
    a. South   b. North   c. East   d. West

10. If BRASS is coded as 63516 and AIR is coded as 715, then SIR is coded as
    a. 63   b. 315   c. 536   d. 617

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