FUTURE BHUBANESWAR SCHOOL

FBS ASSESSMENT CUM SCHOLARSHIP TEST (FAST)
FOR XI

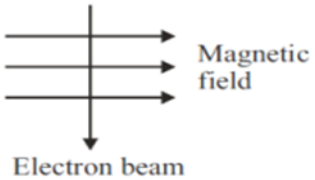
General Instructions:

- ✓ 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***.

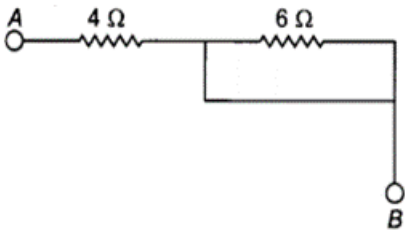
Maximum Marks: 100 **Time Allowed: 1.5 Hours**

SECTION-A (PHYSICS)

1. The focal length of a concave mirror is 10cm. The position of the object that is useful for getting an enlarged image which can be caught on a screen is
   a. Placed at a distance of 5 cm from the pole of the mirror
   b. Placed at a distance of 15 cm from the pole of the mirror
   c. Placed at a distance of 35 cm from the pole of the mirror
   d. Placed at a distance of 25 cm from the pole of the mirror
2. Type of lens used in correction of myopia
   a. Convex lens
   b. Reflecting lens
   c. Concave lens
   d. Bifocal lens
3. Twinkling of stars is due to atmospheric
   a. Dispersion of light by water droplets
   b. Refraction of light by different layers of varying refractive indices
   c. Scattering of light by dust particles
   d. Internal reflection of light by clouds
4. Fleming's left hand rule is used to find
   a. Current
   b. Magnetic force
   c. Magnetic field
   d. None
5. An electron beam enters a magnetic field at right angles to it as shown in the Figure. The direction of force acting on the electron beam will be
   a. To the left
   b. Into the page
   c. To the right
   d. Out of the page



6. The effective resistance between A and B from the figure is
   a. 4Ω
   b. 6Ω
   c. May be 10 Ω
   d. Must be 10 Ω



7. Which of the following statement is not correct about the magnetic field?
   a. Magnetic field lines form a continuous closed curve.
   b. Magnetic field line do not interest each other.
   c. Direction of tangent at any point on the magnetic field line curve gives the direction of magnetic field at that point.
   d. Outside the magnet, magnetic field lines go from South to North pole of the magnet.
8. Fuse wire is a wire of
   a. Low resistance and low melting point
   b. Low resistance and high melting point
   c. High resistance and high melting point
   d. High resistance and low melting point
9. Two lenses of power +2.50 D and -3.75 D are combined to form a compound lens. Its focal length in cm will be
   a. 40 b. -40 c. 80 d. -80
10. A wire of resistance R_1 is cut into five equal pieces. These five pieces of wire are then connected in parallel. If the resultant resistance of this combination be R_2, then the ratio R_1/ R_2 is:
   a. 1/25 b. 1/5 c. 5 d. 25

SECTION-B (CHEMISTRY)

11. A carbon compound contains two atoms of carbon. Which name should the carbon compound bear?
   a. Butane b. Ethane c. Methane d. Propane
12. Methane, ethane and propane are said to form a homologous series because all are
   a. Hydrocarbons
   b. Saturated compounds
   c. Aliphatic compounds
   d. Differ from each other by a CH_2 group
13. Following is (are) the property(ies) of ionic compounds.
   a. They have high melting and boiling points
   b. They conduct electricity in solution or in molten state
   c. Both (a) and (b)
   d. None of the above
14. 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
15. The electronic configuration of three elements X, Y and Z are as follows:
   X = 2, 4, Y = 2, 7, Z = 2, 1 which two elements will combine to form an ionic compound and write the correct formula,
   a. X_2Y b. YZ c. XZ_3 d. Y_2Z
16. The atomic number of an element 'X' is 12. Which inert gas is nearest to X?
   a. He b. Ar c. Ne d. Kr
17. 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
18. An aqueous solution turns red litmus solution blue. Excess addition of which of the following solution would reverse the change?
   a. Baking powder
   b. Lime
   c. Ammonium hydroxide solution
   d. Hydrochloric acid

19. Oxidation is a process which involves
    a. Addition of oxygen
    b. Addition of hydrogen
    c. Removal of oxygen
    d. Removal of hydrogen
20. A substance added to food containing fats and oils is called:
    a. Oxidant b. Rancid c. Coolant d. Antioxidant

SECTION – C (BIOLOGY)

21. Lipase acts on_____.
    a. Carbohydrates
    b. Amino acids
    c. Fats
    d. All of these
22. Opening and closing of pores is a function performed by
    a. Stomata
    b. Chloroplast
    c. Chlorophyll
    d. Guard cells
23. The number of atoms of oxygen present in ozone are
    a. 4 b. 3 c. 1 d. 2
24. Which of the following is an example of herbivores?
    a. Cow b. Shark c. Lion d. Tiger
25. Fruits are formed from
    a. Stamen b. Stigma c. Ovary d. Ovule
26. Growing foetus derive nutrition from mother's blood through_____.
    a. Uterus b. Cervix c. Placenta d. Vagina
27. What is the probability that the male progeny will be a boy?
    a. 50% b. 56% c. 47.43% d. It varies.
28. 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
29. 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
30. Which plant hormone promotes cell division?
    a. Auxin b. Gibberellin c. Cytokinin d. Abscisic acid

SECTION-D (MATHEMATICS)

31. The LCM of smallest two digit composite number and smallest composite number is _____.
    a. 12 b. 4 c. 20 d. 44
32. The value of k for which the pair of linear equations $4x + 6y - 1 = 0$ and $2x + ky - 7 = 0$ are parallel.
    a. 3 b. 2 c. 4 d. -2
33. The pair of linear equation $x - 2y = 5$ and $2x - 4y = 0$ has _____ solution(s).
    a. Many solution
    b. 1 solution
    c. No solution
    d. None of these
34. The sum of the reciprocals of Rahman's ages 3 years ago and 5 years from now is 1/3. The present age of Rahman is:
    a. 7 b. 10 c. 5 d. 6
35. Which of the following equations has 2 as a root?
    a. $x^2 - 4x + 5 = 0$
    b. $2x^2 - 7x + 6 = 0$
    c. $x^2 + 3x - 12 = 0$
    d. $3x^2 - 6x - 2 = 0$

36. The sum of first 10 natural numbers is:
a. 50 b. 60 c. 55 d. 65

37. The next term of the AP - √8, √18, √32 ... is:
a. 5 √2 b. 2 √5 c. 3 √3 d. 5 √3

38. If the length of a tangent from a point A at a circle of radius 3 cm is 4 cm, then the distance of A from the center of circle is __________.
a. $\sqrt{7}cm$ b. 7cm c. 5cm d. 25cm

39. Two concentric circles are of radii 5cm and 3cm. The length of the chord of the larger circle which touches the smaller circle is _____________.
a. 6cm b. 9cm c. 2cm d. 8cm

40. Graph of consistent pair of linear equations in two variables is ________.
a. Intersecting lines
b. Coincidence lines
c. Parallel lines
d. Both (a) and (b)

SECTION-E (MENTAL ABILITY)

41. Introducing a man, a woman said, "He is the only son of my mother's mother." How is the woman related to the man ?
a. Mother b. Aunt c. Sister d. Niece

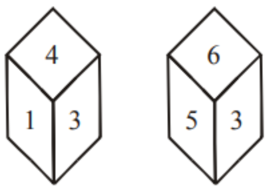
42. In a code, CORNER is written as GSVRIV. How can CENTRAL be written in that code ?
a. DFOUSBM
b. GIRXVEP
c. GNFJKER
d. None of these

43. Amir was born on Feb 29th of 2012 which was a Wednesday. If he lives to be 101 years old, how many birthdays would he celebrate on a Wednesday?
a. 3 b. 4 c. 5 d. 1

44. A clock which gains 10 minutes in 24 hours, is set right at 12 AM. What will be the true time when the clock indicates 5 AM on the following day?
a. 4: 48 AM
b. 5: 12 AM
c. 4: 50 AM
d. 5: 15 AM

45. The year next to 1896 that will have the same calendar as that of the year 1896 :
a. 1902 b. 1904 c. 1905 d. 1908

46. The number on opposite side of the face having number 3 will be :



a. 1 b. 2 c. 4 d. 5

47. How does the reflection of SJR9PZE7C18 look like in the water? Choose the right option.
a. 
b. 
c. 
d. 

48. Statements : No giraffe is a leopard
All leopards are kangaroos
All kangaroos are wolfs
Conclusions : (A) All kangaroos can never be giraffes.
(B) All giraffes are definitely wolfs.
a. Only conclusions (A) follows.
b. Only conclusion (B) follows.
c. Either conclusion (A) or conclusion (B) follows.
d. Both conclusions (A) and (B) follow.

49. If REASON is coded as 5 and BELIEVED as 7, then what is the code for GOVERNMENT?
    a. 6 b. 8 c. 9 d. 10
50. This question is based upon the information given below. Study the information carefully and then choose the correct alternative to answer the question. Five friends A, B, C, D and E are sitting on a bench.
    (1) A is sitting next to B.
    (2) C is sitting next to D.
    (3) D is not sitting with E.
    (4) E is on the left end of the bench.
    (5) C is on second position from the right.
    (6) A is on the right side of B and to the right side of E.
    (7) A and C are sitting together. Where is A sitting?
    a. Between B and D
    b. Between D and C
    c. Between C and E
    d. Between B and C

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