Total No. of Printed Pages : 56

Subject Code : C3
B26-GS
(EN/AS/BN/BD/HN)

1056

3239614

B

2026

GENERAL SCIENCE

Full Marks : 90
Pass Marks : 27

Time : 3 hours

For convenience of the Candidates, all the questions in a particular medium is printed continuously in the order of English, Assamese, Bengali, Bodo and Hindi respectively so that candidate can access to the questions in the medium of their choice. In case of any discrepancy or confusion in the medium/version, the English Version will be considered as authentic version.

The figures in the margin indicate full marks for the questions.

SECTION – A

$1 \times 45 = 4$

Choose the correct answer :

1. Ethane, with the molecular formula C_2H_6 has

(a) 6 covalent bonds
(b) 7 covalent bonds
(c) 8 covalent bonds
(d) 9 covalent bonds

2. Fullerenes form a class of carbon allotropes. The first fullerene identified as –

(a) C12
(b) C60
(c) C20
(d) C80

3. When the litmus solution is neither acidic nor basic, its colour will be –

(a) Blue
(b) Purple
(c) Yellow
(d) Brown

4. Match Column-A with Column-B and choose the correct option :

	Column-A		Column-B
(i)	Liquid metal at room temperature	(p)	Iodine
(ii)	Non-metal with metallic lustre	(q)	Gold
(iii)	Most malleable metal	(r)	Mercury

(a) (i) → (r), (ii) → (q), (iii) → (p)
(b) (i) → (r), (ii) → (p), (iii) → (q)
(c) (i) → (p), (ii) → (q), (iii) → (r)
(d) (i) → (q), (ii) → (r), (iii) → (p)

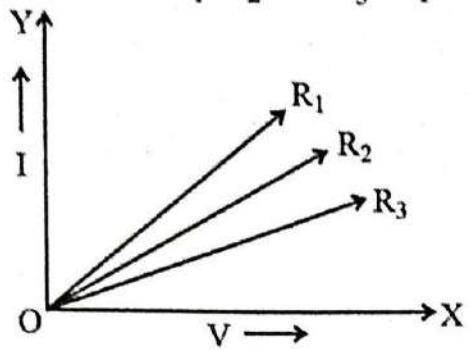
5. When manganese dioxide is heated with aluminium powder, the following reaction takes place :

$$3MnO_2(s) + 4Al(s) \rightarrow 3Mn(l) + X(s) + Heat$$

What could be the compound 'X' ?

(a) $2Al_2O_3$
(b) $2Fe_2O_3$
(c) $2AlCl$
(d) $2MnO$

6. Priyanka performed an experiment and plotted the V-I graph of three samples of nichrome wire having resistance R_1, R_2 and R_3 respectively as shown in the fig :



For the same applied potential difference in which wire the current will be maximum ?

(a) R_1 (b) R_2

(c) R_3 (d) Same in all wires.

7. Two wires, one of manganin and the other of copper, have equal length and equal resistance. Which one of these wires will be thicker ?

(a) Manganin

(b) Copper

(c) Both are in same shape and size.

(d) None of the above

8. Appliances that have metal body are generally connected to the earthing wire. What is the reason to earth these appliances ?

(a) To prevent excess of current.

(b) To prevent the leakage of current.

(c) To provide extra current to appliances.

(d) To provide high resistance to the appliances.

9. A person got a severe electric shock while touching a refrigerator. The reason could might be –

(i) the domestic circuit has no proper earthing.

(ii) the refrigerator may be of manufacturing defect.

(iii) due to flow of extra current to the appliance.

(iv) due to fluctuation of voltage in supply mains.

Choose the correct option from the following.

(a) Only (i) is correct. (b) (i) and (ii), both are correct.

(c) (ii) and (iii) are correct. (d) (i) and (iv) are correct.

10. What happens to the power dissipation, if the value of current passing through a conductor of constant resistance is doubled ?
(a) remains the same (b) 2 times
(c) 3 times (d) 4 times

11. An object of size 4 cm height is placed in between centre of curvature and focus of a concave mirror of focal length 10 cm. The nature and size of the image will be –
(a) real, inverted and bigger than 4 cm.
(b) real, inverted and smaller than 4 cm.
(c) virtual, erect and bigger than 4 cm.
(d) virtual, erect and smaller than 4 cm.

12. The focal length of the eye lens increases, when eye muscles are –
(a) relaxed and lens becomes thinner.
(b) contract and lens becomes thicker.
(c) relaxed and lens becomes thicker.
(d) contract and lens becomes thinner.

13. If a virtual, erect and enlarged image is formed by a lens, then which of the following statement is correct ?
(a) It is a concave lens and the object is placed between optical centre and focus of the lens.
(b) It is a convex lens and the object is placed between focus and the centre of curvature of the lens.
(c) It is a concave lens and the object is placed between focus and the centre of curvature of the lens.
(d) It is a convex lens and the object is placed between optical centre and the focus of the lens.

14. Fill up the gap :
_____ is the process of using waste material to create new products.
(a) Reusing (b) Recycling
(c) Reducing (d) Composting

15. A positively charged particle projected towards west is deflected towards north of a magnetic field. The direction of magnetic field is –
(a) towards east (b) upward
(c) towards south (d) downward

16. Which of the following is a conventional as well as non-renewable source of energy ?
(a) Bio-mass (b) Wind energy
(c) Hydro power plant (d) Fossil fuel

17. Match the following column and choose the correct option :

	A		B
(i)	Chipko Andolan	(p)	Khejrali village
(ii)	Amrita Devi Bishnoi	(q)	Sardar Sarovar Dam
(iii)	Narmada Bachao Andolan	(r)	Reni village

Options :

(a) (i) → (q), (ii) → (p), (iii) → (r) (b) (i) → (r), (ii) → (q), (iii) → (p)
(c) (i) → (r), (ii) → (p), (iii) → (q) (d) (i) → (p), (ii) → (r), (iii) → (q)

18. Which one is not a factor of abiotic component of an eco-system ?
(a) Rainfall (b) Temperature
(c) Sunlight (d) Insects

19. Which option explains the disadvantage of using fossil fuel as energy sources ?
(a) It releases harmful gases into the atmosphere when burn.
(b) It is extracted from deep inside the earth.
(c) It uses oxygen in the process of burning.
(d) It is difficult to transport.

20. The average value for the amount of organic matter that is present at each step and reaches the next level of consumers
(a) 100% (b) 10%
(c) 1% (d) 0.1%

21. Which of the following statements is not correct regarding the role of stomata in plants ?
(a) Gaseous exchange that is necessary for the process of photosynthesis takes place through the stomata.
(b) Transpiration is controlled by the opening and closing of stomata.
(c) Stomata usually remains open during the day.
(d) Plants close their stomata to reduce water loss during dehydration.

22. Pancreatic juice contains digestive enzymes for breaking down of
(a) proteins and carbohydrates only.
(b) proteins and fats only.
(c) carbohydrates and fats only.
(d) proteins, fats and carbohydrates.

23. Find out the name of the organ of human body which filters the waste and excess fluid from the blood.
(a) Heart (b) Lung
(c) Kidney (d) Small intestine

24. Match the organs in the Column-I with their functions in Column-II and select the correct option given below :

	Column-I		Column-II
(i)	Heart	(P)	Blood transporting pipes in human
(ii)	Arteries and veins	(Q)	Clotting of blood
(iii)	RBC	(R)	Pumping organ
(iv)	Platelets	(S)	Carrier of oxygen

Options :

(a) (i) → (R), (ii) → (S), (iii) → (P) , (iv) → (Q)
(b) (i) → (R), (ii) → (P), (iii) → (S) , (iv) → (Q)
(c) (i) → (S), (ii) → (P), (iii) → (Q) , (iv) → (R)
(d) (i) → (R), (ii) → (Q), (iii) → (P), (iv) → (S)

25. The breakdown of pyruvate to release carbon dioxide, water and energy takes place in the cell's :

(a) cytoplasm
(b) mitochondria
(c) chloroplast
(d) nucleus

26. The correct order for a simple reflex arc, like touching a hot object is –

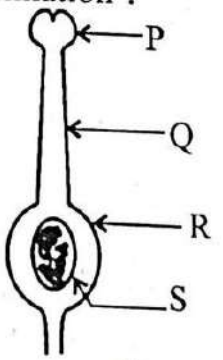
P. Impulse travels in motor fibre.
Q. Impulse travels in sensory fibre.
R. Effector organ stimulated.
S. Impulse crosses synapse.

(a) Q → S → P → R
(b) P → R → Q → S
(c) R → S → P → Q
(d) Q → S → R → P

27. A multicellular organism that reproduces by the process of budding is –

(a) Plasmodium
(b) Yeast
(c) Hydra
(d) Planaria

28. The figure given below shows the female reproductive organs of a plant. Name the structure that receives the pollen grains from the anther of stamen (male reproductive organ) during pollination ?



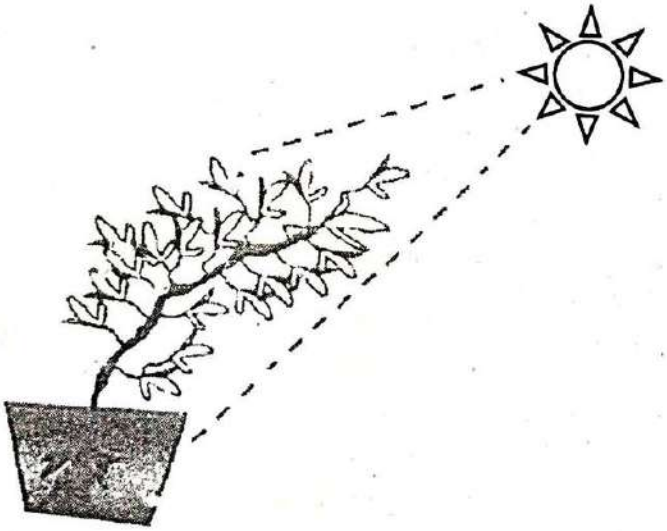
(a) P
(b) Q
(c) R
(d) S

29. The exchange of genetic material takes place in –
(a) Vegetative reproduction
(b) Asexual reproduction
(c) Sexual reproduction
(d) Budding

30. The shedding off of matured leaves and fruits from plants is triggered by the hormone –
(a) Gibberelin
(b) Abscisic acid
(c) Auxin
(d) Cytokinin

31. Which of the following hormone is synthesized with the help of Iodine ?
(a) Adrenaline
(b) Auxin
(c) Thyroxine
(d) Insulin

32.



Which type of movement shown by the plant in the above picture ?
(a) Phototropism
(b) Geotropism
(c) Hydrotropism
(d) Chemotropism

33. Which of the following is not a part of the female reproductive system in human beings ?
(a) Ovary
(b) Uterus
(c) Vas deferens
(d) Fallopian tube

34. Offsprings produced through asexual reproduction show more similarity among themselves because :
(i) Asexual reproduction involves both father and mother.
(ii) Asexual reproduction involves gametes.
(iii) Asexual reproduction involves only one parent.
(iv) Asexual reproduction does not involve gametes.
(a) (i) and (ii)
(b) (i) and (iii)
(c) (ii) and (iv)
(d) (iii) and (iv)

35. A pea plant with round and green seeds (RRyy) is crossed with an another pea plant with wrinkled and yellow seeds (rrYY). What would be the nature of the seeds in the first filial generation (F_1 generation) ?

(a) Round and green (RRyy)
(b) Wrinkled and green (rryy)
(c) Round and yellow (RrYy)
(d) Wrinkled and yellow (rrYY)

36. What is the name of the following compound ?

$CH_3 - CH_2 - COOH$

(a) Methanoic acid
(b) Ethanoic acid
(c) Propanoic acid
(d) Butanoic acid

37. What happens when ethanol is heated with excess concentrated sulphuric acid ?

(a) will produce ethanoic acid
(b) will produce ethene
(c) will produce ester
(d) will evolve hydrogen gas

38. Two statements are given in the question below as Assertion (A) and Reason (R). Read the statements and choose the correct option :

Assertion (A) : When CO_2 gas is passed through lime water for a long time, the solution first turns milky and then becomes colourless.

Reason (R) : Lime water first change into calcium carbonate which then changes into calcium-bicarbonate.

(a) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
(b) Both (A) and (R) are true and (R) is the correct explanation of (A).
(c) (A) is true, (R) is false.
(d) (A) is false, (R) is true.

39. Which of the following reaction is used in black and white photography ?

(a) $CaCO_3 \rightarrow Ca + CO_3$
(b) $2AgBr \rightarrow 2Ag + Br_2$
(c) $2FeSO_4 \rightarrow Fe_2O_3 + SO_2 + SO_3$
(d) $2Pb(NO_3)_2 \rightarrow 2PbO + 4NO_2 + O_2$

40. The correct increasing order of atomic radius of the elements in second period of Modern Periodic table is

(a) Li > Be > B > C > N > O > F > Ne
(b) Ne > F > O > N > C > B > Be > Li
(c) Ne < F < O < N < C < B < Be < Li
(d) Li < Be < B < C < N < O < F < Ne

41. A student conducts an activity where he burns methane in presence of oxygen. What is likely to form ?

(a) Carbon dioxide
(b) Water
(c) Carbon dioxide and water
(d) Carbon dioxide and oxygen

42. An element 'Z' has atomic number 9. In which period and group, it can be placed in the Modern Periodic table ?

(a)

Period	Group
2	7

(b)

Period	Group
7	17

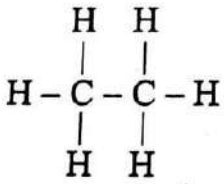
(c)

Period	Group
7	7

(d)

Period	Group
2	17

43. The following structure of Carbon compound represents :



(a) Methane
(b) Ethane
(c) Ethene
(d) Ethanol

44. When calcium oxide is added to water, it completely dissolves in water. What products are formed in this reaction ?

(a) Ca and H_2
(b) CaH
(c) Ca and H_2O
(d) $Ca(OH)_2$

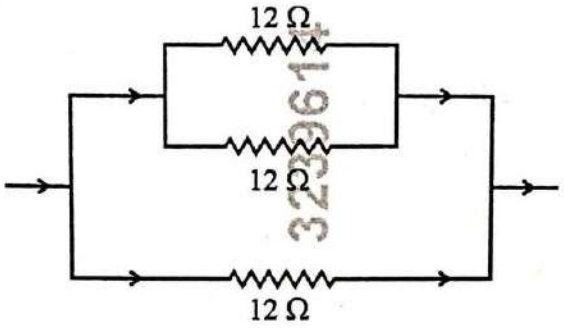
45. Four elements W, X, Y, Z having atomic numbers 11, 13, 16 and 17 respectively. Which one among them has the most metallic property ?

(a) X
(b) W
(c) Z
(d) Y

53. A circuit has a fuse of 5 A. What is the maximum number of 100 W (220 V) bulbs that can be safely used in parallel connected with the circuit ? 2

OR

Calculate the equivalent resistance of three resistors of 12 Ω each if connected as shown in the circuit : 2



54. A convex lens of focal length 10 cm forms a real and inverted image at a distance of 20 cm from the lens. Find the object distance. Also draw the ray diagram showing formation of image. 2

OR

An object is placed 15 cm from a concave mirror with a focal length of 10 cm. If the object is moved 5 cm closer to the mirror, how will the magnification change ? 2

55. What is advanced sunrise and delayed sunset ? What is the cause of occurrence of this phenomenon ? 3

56. Give the name of two energy sources that you would consider to be exhaustible. Give reason for your choice. 1 + 1 = 2

57. (i) State two major problems that arise in establishing big Dams. 2

(ii) Why should we be very conscious and economical while consuming the fossil fuel ? 2

58. How does binary fission differ from multiple fission ? 2

OR

Describe the process of reproduction in Amoeba with the help of properly labelled diagrams. 2

59. Draw a longitudinal section of a human heart and show the course of blood flow through it with arrow marking. 2

OR

Describe the mechanism of urine formation through the excretory system in human. 2

60. What are the plant hormones ? Give an example of a plant hormone that promotes growth. 1 + 1 = 2

OR

Why some diabetic patients are treated by giving insulin injection ? 2

61. Draw the diagram of the human digestive system and label the following : 2 + 1 = 3

(i) the organ where bile remain stored.

(ii) the gland that secretes both hormones and enzymes.

(iii) the largest gland of the human body.

(iv) the part, where starch digestion is initiated.

62. What is an endocrine gland ? State two differences between the endocrine gland and the exocrine gland. 1 + 2 = 3

63. "Variation is beneficial to the species, but it is not necessary for an individual." Justify the statement. 3

OR

What is evolution ? Explain how does homologous and analogous organs gives evidence of evolutionary relationship. 1 + 2 = 3