B

SL. No. : F

ಒಟ್ಟು ಪ್ರಶ್ನೆಗಳ ಸಂಖ್ಯೆ : 42]
Total No. of Questions : 42]

[ಒಟ್ಟು ಮುದ್ರಿತ ಪುಟಗಳ ಸಂಖ್ಯೆ : 12
[Total No. of Printed Pages : 12

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ಸಂಕೇತ ಸಂಖ್ಯೆ : **83-E**

Code No. : 83-E

ವಿಷಯ : ವಿಜ್ಞಾನ

Subject : SCIENCE

(ಭೌತಶಾಸ್ತ್ರ, ರಸಾಯನಶಾಸ್ತ್ರ ಮತ್ತು ಜೀವಶಾಸ್ತ್ರ / Physics, Chemistry & Biology)

(ಇಂಗ್ಲಿಷ್ ಭಾಷಾಂತರ / English Version)

(ಹಳೆ ಪಠ್ಯಕ್ರಮ / Old Syllabus)

(ಪುನರಾವರ್ತಿತ ಶಾಲಾ ಅಭ್ಯರ್ಥಿ / Regular Repeater)

ದಿನಾಂಕ : 24. 06. 2019]

[Date : 24. 06. 2019

ಸಮಯ : ಬೆಳಗ್ಗೆ 9-30 ರಿಂದ ಮಧ್ಯಾಹ್ನ–12-30 ರವರೆಗೆ] [Time : 9-30 A.M. to 12-30 P.M.

ಗರಿಷ್ಠ ಅಂಕಗಳು : 80]

[Max. Marks : 80

TEAR HERE TO OPEN THE QUESTION PAPER
ಪ್ರಶ್ನೆಪತ್ರಿಕೆಯನ್ನು ತೆರೆಯಲು ಇಲ್ಲಿ ಹರಿಯಿರಿ

Tear here

General Instructions to the Candidate :

1. This Question Paper consists of 42 objective and subjective types of questions.
2. This question paper has been sealed by reverse jacket. You have to cut on the right side to open the paper at the time of commencement of the examination. Check whether all the pages of the question paper are intact.
3. Follow the instructions given against both the objective and subjective types of questions.
4. Figures in the right hand margin indicate maximum marks for the questions.
5. The maximum time to answer the paper is given at the top of the question paper. It includes 15 minutes for reading the question paper.

Four alternatives are given for each of the following questions / incomplete statements. Only one of them is correct or most appropriate. Choose the correct alternative and write the complete answer along with its letter of alphabet.

$10 \times 1 = 10$

1. The solar device used for seasoning of wood and desalination of sea water is

   (A) solar cell

   (B) solar collector

   (C) solar heater

   (D) solar lamp.

2. Which of the following elements has Octet Electronic Configuration ?

   (A) Sodium (atomic number is 11)

   (B) Argon (atomic number is 18)

   (C) Calcium (atomic number is 20)

   (D) Lithium (atomic number is 3).

3. The disease caused by Treponema pallidum is

   (A) Gonorrhoea

   (B) Genital herpes

   (C) Syphilis

   (D) Hepatitis-B.

4. The component in Sonar, that converts ultrasonic waves into electrical signals is

(A) detector

(B) transmitter

(C) converter

(D) analyser.

5. In the preparation of Jaggery, the compound used to slightly eliminate the dark colour of Jaggery is

(A) norit

(B) hydrosol

(C) celotex

(D) cellulose.

6. The hormone that inhibits the growth of plant is

(A) auxin

(B) gibberellin

(C) cytokinin

(D) abscisic acid.

7. The device which works on the principle of mutual induction is

(A) motor (B) dynamo

(C) transistor (D) transformer.

8. Parenchyma tissue filled with air in its intercellular spaces is

(A) Chlorenchyma

(B) Aerenchyma

(C) Sclerenchyma

(D) Collenchyma.

9. The compound that has greater rate of diffusion among C_2H_6, C_3H_6, CH_4 and C_4H_{10} at normal temperature and pressure is

(A) C_2H_6 (B) C_3H_6

(C) C_4H_{10} (D) CH_4.

10. The types of plants in genotypic ratio of Mendel's monohybrid cross experiment are

(A) 3 hybrid tall, 1 dwarf

(B) 1 pure tall, 2 hybrid tall, 1 pure dwarf

(C) 1 hybrid tall, 2 pure tall, 1 pure dwarf

(D) 1 hybrid tall, 3 pure dwarf.

11. Match the names of organic compounds given in **Column-A** with their molecular formula given in **Column-B** and write the answer along with its letters : $4 \times 1 = 4$

Column - A		***Column - B***	
(A)	Butyne	(i)	C_6H_6
(B)	Methane	(ii)	C_4H_8
(C)	Propene	(iii)	C_4H_6
(D)	Benzene	(iv)	CH_4
		(v)	C_3H_8
		(vi)	C_6H_{12}
		(vii)	C_3H_6

Answer the following questions. $7 \times 1 = 7$

12. What is the function of bone marrow ?

13. State Boyle's law.

14. Tidal energy is more reliable than wind energy. Why ?

15. Write the ground state electronic configuration of carbon atom.

16. What is the effect of radioactive materials, when they react with biological molecules ?

17. Name the type of current produced when slip rings are replaced by split rings in a dynamo.

18. *n*-butane and iso-butane are called isomers. Why ?

Answer the following questions. 16 × 2 = 32

19. Write any two differences between longitudinal waves and transverse waves.

20. Draw the diagram of the apparatus used in refining of copper. Label the following parts :

    (i) Anode

    (ii) Cathode.

21. List the harmful effects of 'Use and throw' practice on soil.

OR

The industries using high temperature furnaces should not be planted on the river banks. Why ?

22. Explain the intake stroke in the working of a petrol engine.

23. A part of the modern periodic table is given below. Observe the table and answer the questions :

$_{5}B^{11}$	$_{6}C^{12}$	$_{7}N^{14}$	$_{8}O^{16}$
$_{13}Al^{27}$	$_{14}Si^{28}$	$_{15}P^{31}$	

Name the element which has

(i) highest ionisation energy

(ii) highest atomic size.

24. Draw the diagram of a dicot plant. Label the following parts :

(i) Tap root

(ii) Leaf.

25. The efficiency of a heat engine is 30. If 60,000 joules of heat is supplied to the engine then calculate the work done by the engine.

26. Explain the method of extraction of amorphous silicon.

OR

Write the chemical equations for the following chemical reactions :

(i) Silicon reacts with oxygen

(ii) Silicon reacts with steam.

27. "The heart muscles have suitable structure to work continuously throughout a person's life span." Justify this statement.

28. A ship sends ultrasonic sound. This sound reflects from seabed and returns after 6 seconds. If the speed of ultrasonic sound through seawater is 1·5 kms^{-1} then find the depth of the sea.

29. Mention the raw materials used in the manufacture of glass.

OR

Mention the type of paper used in the following :

(i) Post card

(ii) Dip tea bags.

30. "Quality of food materials have been improved through recombinant DNA technology." Justify this statement.

31. Draw the diagram of D.C. motor. Label the following parts :

(i) Brushes

(ii) Coil on armature.

32. Compared to sexually transmitted diseases the death rate is more in bird flu. Why ?

33. Mention the steps involved in the manufacture of sucrose from sugarcane.

OR

Write the balanced chemical equations for the chemical reactions taking place in the conversion of sucrose into ethanol.

34. Write the characteristics of Neanderthal man.

OR

Write the characteristics of Mongoloid man.

Answer the following questions. $5 \times 3 = 15$

35. Draw the diagram of nuclear power reactor. Label the following parts :

(i) Radiation sheild

(ii) Coolant.

36. (i) Explain the alternation of generation with reference to bryophytes.

(ii) Write two characteristics of Cycas.

37. Draw the diagram of the apparatus used in electroplating. Label the following parts :

(i) Electrolyte

(ii) Ammeter

38. (i) Write two differences between *p*-type and *n*-type of semiconductors.

(ii) Write any two applications of diode.

OR

(i) Write two differences between intrinsic and extrinsic type of semiconductors.

(ii) Write any two applications of super conductors.

39. Write the application of biotechnology in the following fields :

(i) Agriculture

(ii) Health and medicine

(iii) Food processing.

OR

Draw the checker board showing the results of F_2 generation in Carl Correns hybridization experiment. How does it verify the law of 'incomplete dominance' ?

Answer the following questions. $3 \times 4 = 12$

40. (a) Mention the stages in the life cycle of a star and explain its beginning stage.

(b) Why do stars appear in different colours ?

OR

(a) Explain Big bang theory.

(b) Write the relationship between escape velocity and orbital velocity.

41. (a) What is the function of limestone and coke in the extraction of iron from haematite ?

(b) Mention the alloy used in the preparation of the following :

(i) Permanent magnets

(ii) Bus coaches.

42. Draw the vertical section of the human eye. Label the following parts :

(i) Iris

(ii) Retina.