



SEVEN SQUARE ACADEMY

Academic Year - 2019-2020
Secondary Section (PreBoard - I)

Name _____

Subject: Science (086)

Date: 09/01/2020

Class: X

Marks: 80

Time: 3:00 Hours (SET - A)

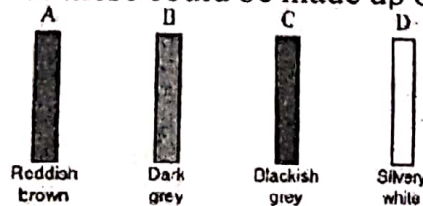
General Instructions:

1. The question paper comprises of three sections – A, B and C. Attempt all the sections.
2. All questions are compulsory.
3. Internal choice is given in each section.
4. All questions in Section A are one-mark questions comprising MCQ, VSA type and assertion reason type questions. They are to be answered in one word or in one sentence.
5. All questions in Section B are short-answer type questions of 3 marks each. These are to be answered in about 50 - 60 words each.
6. All questions in Section C are long-answer type questions of 5 marks each. These are to be answered in about 80 – 90 words each.
7. This question paper consists of a total of 30 questions.

Section A

1. When carbon dioxide gas is passed through calcium hydroxide solution it forms [1]
- a) calcium carbonate
b) calcium
c) calcium bicarbonate
d) calcium chloride

2. Four strips labelled A, B, C and D along with their corresponding colours are shown below. Which of these could be made up of aluminium? [1]



- a) A
b) C
c) B
d) D
3. What is spectrum- [1]
- a) None of these
b) The band of 5 colours
c) The band of 6 colours
d) The band of 7 colours
4. Given below are randomly written steps for the experiments to show that light is necessary for photosynthesis. Which out of the following is the correct sequence of steps for a successful run of the experiment? [1]
- I. Pluck the experimental leaf 5
II. Using strips of black paper, cover a portion of the leaf on both sides 2
III. Destarch leaf of the potted plant 3
IV. Test the experimental leaf for presence of starch 1
V. Expose the plant to sunlight for four hours 4

VI. Remove the black paper strips from the leaf

- a) II, I, V, VI, III, IV
c) V, I, II, III, IV, VI

- b) III, II, V, I, VI, IV
d) I, III, II, IV, V, VI

5. In sperm, mitochondria occurs in [1]
a) Middle pie b) Acrosome
c) Head d) Tail

6. Where does the embryo develop in a human female? [1]
a) seminal vesicles b) Fallopian tube
c) vagina d) uterus

7. A student has to do the experiment on finding the focal length of a given convex lens by using a distant object. She can do her experiment if she is also made available with [1]
a) a lamp and a screen b) a scale and a screen
c) a lamp and a scale d) only a screen

8. A ray passing through the centre of curvature of a concave mirror is inclined at an angle to its principal axis. The angle of reflection for this ray equals: [1]
a) 0°
b) $(a/2)^\circ$
c) 90°
d) α°

9. For an incident angle 'i' refraction angle was found to be r_1 and r_2 ($r_2 > r_1$) for two media A and B respectively. Then [1]
a) A is denser than B
b) We cannot identify the denser medium
c) Both are equally dense
d) B is denser than A

10. Magnesium imparts: [1]
a) Dazzling white colour flame b) Yellowish orange colour flame
c) None of these d) Brick red colour flame

11. The Iron pillar near the Qutub Minar in Delhi is prevented from rusting because of: [1]
a) Formation of Fe_2O_3 on the surface. b) Formation of Al_2O_3 on the surface.
c) None of these d) Formation of Fe_3O_4 on the surface.

12. Match the following with the correct response:

(1) Bond which holds cations and anions A	(A) Ionic
(2) Self linking property of carbon C	(B) Pyridine
(3) Denatured alcohol B	(C) Catenation
(4) Synthetic detergents D	(D) Non-biodegradable

- a) 1-D, 2-A, 3-C, 4-B
- c) 1-C, 2-B, 3-D, 4-A

- b) 1-B, 2-D, 3-A, 4-C
- ~~d) 1-A, 2-C, 3-B, 4-D~~

13. Which of the following substances produce hydrogen on reacting with metals? [1]

- a) All of these
- b) Water (H_2O)
- c) C_2H_5OH
- d) H_2SO_4

14. If the parathyroid gland is damaged, there may be a [1]

- a) rise in phosphorus level
- b) rise in calcium level
- c) fall in calcium level
- d) fall in phosphorus level

15. Internal activities are controlled by:- [1]

- a) CNS
- b) ANS
- c) PNS
- d) None of these

16. **Statement A** : The line joining the Earth's magnet is called magnetic axis.
Statement B : Chemical energy is converted into electrical energy in AC generator. [1]

- a) Statement A is true, B is false
- b) Both the statements A and B are true
- c) Neither statement A nor statement B is true
- d) Statement B is true, A is false

organic garbage storage red worm now done

17. What will be the sex of the embryo if an egg is fertilized by a sperm having a '22 + X' composition? [1]

- a) Female
- b) Can be male or female
- c) Neither male nor female
- d) Male

18. Father of Human genetics is [1]

- a) H.G Khurana
- b) Sir Archibald Garrod
- c) Gregor Mendel
- d) Charles Darwin

19. **Statement A** : Oceans serve as the most potential source of renewable energy ,
Statement B : Energy from nuclear fusion creates more pollution than energy from nuclear fission. [1]

- a) Both the Statements A and B are not true
- b) Statement A is true, B is false
- c) Both the Statements A and B are true
- d) Statement B is true, A is false

20. Which of the following is considered as liquid gold? [1]

- a) Petroleum
- b) Fuel oil
- c) Diesel
- d) Kerosene

Section B

21. What are inherited traits? Give one example. [3]

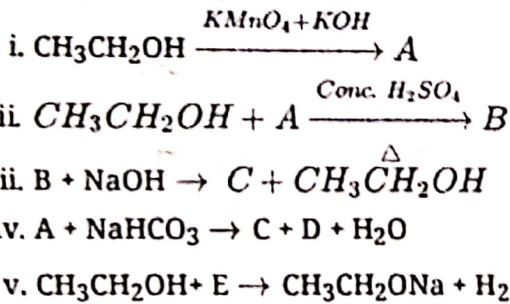
22. What is the ultimate source of organic variation? [3]

23. How do metals and non-metals combine? [3]

24. Why is small intestine in herbivores longer than in carnivores? *But having different functions*
25. What are two kinds of pollination? *eg: - man & woman have same blood*
26. A man with type A blood has a wife with type B. They have a child with type O blood. Give the genotype of all the three. What other blood groups can be expected in the future offspring of this couple? *contrasting* [3]
27. Name an acid used (a) to flavour and preserve food (b) in a drink (c) to remove ink spots (d) as an eye wash. [3]
28. What is electrical resistivity? In a series electrical circuit comprising of a resistor made up of a metallic wire, the ammeter reads 5 A. The reading of the ammeter decreases to half when the length of the wire is doubled. Why? [3]
29. On adding a drop of barium chloride solution to an aqueous solution of sodium sulphite, white precipitate is obtained. [3]
- Write a balanced chemical equation of the reaction involved.
 - What other name can be given to this precipitation reaction? *HCl +*
 - On adding dilute hydrochloric acid to the reaction mixture, white precipitate disappears. Why? *→ Ba*
30. Why are we not able to see the object clearly for some time when we enter bright light to a room with dim light? [3]

Section C

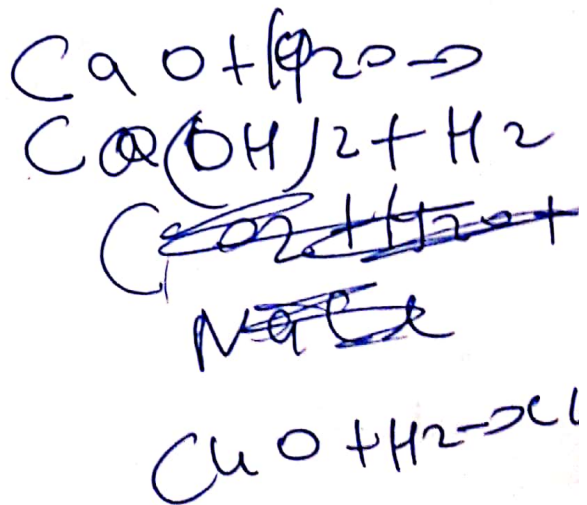
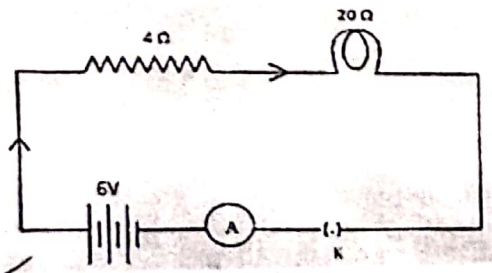
31. Identify the compounds A to E in the following reaction sequence. [5]



eg: - Birds & Bats having different structures but they have same functions

32. An electric lamp of resistance 20Ω and a conductor of resistance 4Ω are connected to a 6 V battery as shown in the circuit. Calculate: [5]

- the total resistance of the circuit,
- the current through the circuit,
- the potential difference across the
 - electric lamp
 - conductor, and
- power of the lamp



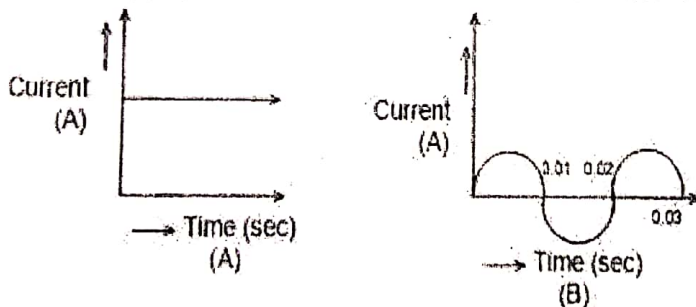
Endocrine without duct directly into

Blood stream is called endocrine gland.

33. i. What are animal hormones? List their two characteristics. [5]
 ii. Name the hormone.
 a. Which brings change in male humans during the beginning of adolescence?
 b. Which coordinates the level of sugar in blood?

34. a) What is meant by pH? [5]
 b) Water is a neutral substance. What colour will you get when you add a few drops of universal indicator to a test tube containing distilled water?
 c) Two solutions A and B have pH values of 3.0 and 9.5, respectively. Which of these will turn litmus solution from blue to red and which will turn phenolphthalein from colourless to pink?

35. Current- time graph from two different sources are shown in the figure [5]



- a. Name the type of current shown by graph (A) and (B)?
 b. Name any one source of shown by (A) and (B)?
 c. What is frequency of current in case (B)?
 d. Write two differences between current shown by (A) and (B)?
36. Explain the process of digestion of food in mouth, stomach and small intestine in human body. [5]

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