*This Question Paper contains 12 printed pages.*
***(Sections - A, B, C & D)***

Sl.No.

# 11 (E)

**(MAY, 2021)**
**(New Course)**

***Time : 3 Hours]*** ***[Maximum Marks : 80***

**Instructions :**

1) **Write in a clear legible hand writing.**
2) **This question paper has four Sections A, B, C & D and Question Numbers from 1 to 53.**
3) **All questions are compulsory. There are only internal options.**
4) **The numbers to the right represent the marks of the question.**
5) **Draw neat diagrams wherever necessary.**
6) **New sections should be written in a new page. Write the answers in numerical order.**

## SECTION - A

**For question 1 to 6 choose the correct alternative from the options given below each question. (MCQ)**

1) Burning of coal is _____ type of reaction. **[1]**
   (A) Displacement
   (B) Decomposition
   (C) Double displacement
   (D) Combination

2) A molecule of ethene ($C_2H_4$) has **[1]**
   (A) Only single bond
   (B) Only double bond
   (C) Only triple bond
   (D) Single and double bond

3) _____ is necessary for an autotropic nutrition. [1]

(A) $CO_2$

(B) Chlorophyll

(C) Sunlight

(D) All of the above

4) Which of the following group contain only bio-degradable substances? [1]

(i) grass, flower, leather

(ii) grass, wood, plastic

(iii) fruit peels, cake, lemon juice

(iv) cake, wood, grass

(A) (i) and (ii)

(B) (i), (ii) and (iv)

(C) (i), (iii) and (iv)

(D) (ii) and (iv)

5) Which type of image cannot be obtained by a convex lens? [1]

(A) Virtual and small

(B) Virtual and large

(C) Real and small

(D) Real and large

6) Which of the following phenomena is / are responsible for the formation of rainbow? [1]

(A) Refraction

(B) Dispersion

(C) Internal reflection

(D) All of the above

**Fill in the blanks with appropriate words given in the bracket.**

**(questions 7 to 12)**

**7)** Unique ability of carbon to form bonds with other atoms of carbon is known as _____. **[1]**

(catenation, tetravalency, trivalency)

**8)** For the classification of element law of triads was given by _____ scientist. **[1]**

(Newland, Dobereiner, Mendeleev)

**9)** Opening and closing of stomatal pore is regulated by _____ cells.**[1]**

(gaurd, epidermal, aerenchyma)

**10)** _____ produces testosterone hormone. **[1]**

(Vas deferens, testis, ovary)

**11)** Concave lens with _____ focal is having largest power. **[1]**

(20 cm, 30 cm, 10 cm)

**12)** _____ W of electricity can be approximately generated by a solar cell. **[1]**

(7.0, 0.7, 1.0)

**State whether the following statements are TRUE or FALSE.**

**(questions 13 to 16)**

**13)** Mendeleev named Galium as eka-silicon. **[1]**

**14)** One quarter of the obtained plants in $F_2$ generation of the Mendelian experiment were short. **[1]**

**15)** Absolute refractive index of any material medium should be always greater than one. **[1]**

**16)** Solar cooker works on the principle of "solar energy converted to light energy". **[1]**

**Answer the following in a word or a sentence :**

**(Questions 17 to 24)**

**17)** Which actions are controlled by medulla oblongata? **[1]**

**18)** Selection of arrested flower of wild cabbage plant has led to development of which vegetable? **[1]**

**19)** Few years back which animals fossils were found from Narmada Valley? **[1]**

**20)** Name the physical quantity that has KWh unit. **[1]**

**21)** What is the main risk factor of a nuclear power generator? **[1]**

**22)** Use of plastic disposable cups served in train should be avoided / stopped because _____. **[1]**

**23)** Match the following : **[1]**

| Source of Energy | | Type | |
|---|---|---|---|
| a) | Mineral oil | i) | Renewable |
| b) | Ocean thermal energy | ii) | Nuclear energy |
| | | iii) | Non-renewable energy |

**24)** Find out the mismatched pair from the following : **[1]**

i) Iodine - activates thyroid gland

ii) Insulin - regulation of sugar in blood

iii) Pituitary - secretion necessary for balanced growth

iv) Ovary - regulation of digestive action

## SECTION - B

**Answer any 9 questions from question number 25 to 36. Answer each question in the limit of 40 to 50 words. (Each question carries 2 marks)[18]**

**25)** While diluting an acid, why is it recommended that acid should be added to water? **[2]**

**26)** Give an example of metal which : **[2]**

i) is a liquid at room temperature

ii) can be easily cut with a knife

iii) is the best conductor of heat

iv) is a poor conductor of heat

**27)** Write two points of difference between Mendeleev's periodic table and Modern periodic table. **[2]**

**28)** The atomic number of an element 'X' is 12 **[2]**

i) Identify element 'X' and write its electronic configuration.

ii) State to which group and period does 'X' belong.

**29)** What is the importance of DNA copying in reproduction. **[2]**

**30)** Explain sex determination in human being. **[2]**

**31)** What is meant by saying that the potential difference between two points is 1V? Name the device that helps to maintain a potential difference across a conductor. **[2]**

**32)** State Ohms law. Derive the equation for the law. **[2]**

**33)** Write down the properties of magnetic field lines of force. **[2]**

**34)** What will be your role in "Swatchh Bharat Abhiyan" to reduce the problem of waste disposal? **[2]**

**35)** State the importance of forest. **[2]**

**36)** Explain 2R's **[2]**

i) Refuse and

ii) Reduce for saving the environment

## SECTION - C

**Answer any 6 from question number 37 to 45. Answer each question in the limit of 60 to 80 words. [Each question carries 3 marks]** **[18]**

**37)** State different types of decomposition reaction. Also give an example of any two type with appropriate chemical reaction. **[3]**

**38)** One gold smith makes ornaments of 22 carat gold and sell it at the price of 22 carat. **[3]**

i) Why can't we use 24 carat gold for making ornaments?

ii) Which metals are mixed with gold in making of an ornaments?

iii) What value of the gold Smith is observed here?

**39)** Compound 'X' and aluminium is used to join railway tract. **[3]**

i) Identify compound 'X'.

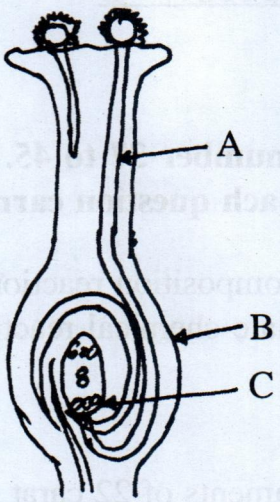
ii) Name the type of reaction.

iii) Write the chemical equation for this reaction.

**40)** For a particular situation which hormone prepares the human body for either fighting or running away from the situation. State the effect of this hormone in animals body. **[3]**

**41)** Explain different methods of contraceptions in human being. **[3]**

42) [3]




From the above figure

i) Identify 'A' and write its function

ii) Identify 'B' and State what change takes place in 'B' after fertilisation.

iii) Identify 'C' and state what change will take place in 'C' after fertilisation.

43) A student is using a lens to burn a paper with the help of sunlight. [3]

i) State the type of lens used

ii) State the position of image formed

iii) Draw the ray diagram for the same.

44) Define refraction of light. State laws of refraction of light. [3]

45) Draw a schematic diagram of a circuit consisting of 2 resistors $R_1$ and $R_2$, Voltmeter, ammeter, key, battery and conducting wire all are connected in parallel. [3]

## SECTION - D

**Answer any 5 questions from question number 46 to 53. Answer each question in the limit of 90 to 120 words. (Each question carries 4 marks)[20]**

**46)** Explain an experiment (with neat labelled diagram) explaining the reaction between sodium carbonate with dilute hydrochloric acid. **[4]**

**47)** Explain the importance of pH in human digestive system and sting by a honey - bee. **[4]**

**48)** Name the ionic group contained in soap and detergent. Explain the mechanism of cleansing action of soap. **[4]**

**49)** Draw a neat labelled diagram of a nephron. Explain the process of urine formation in human being. **[4]**

**50)** Draw a neat labelled diagram of human digestive system. Explain how digestion take place in small intestine. **[4]**

**51)** Explain dispersion of white light by a glass prism with required diagram.**[4]**

**52)** Explain the following terms : **[4]**

i) Over loading

ii) Short circuit

iii) Fuse

iv) Earthing

**53)** In an activity demonstrating the force acting on a current-carrying conductor placed in a magnetic field as shown in the figure, how do you think the displacement of rod AB will be affected if **[4]**

i) current in the rod AB is increased

ii) a stronger horse-shoe magnet is used; and

iii) length of the rod AB is increased ?

iv) when will the displacement of rod AB will be the largest.