This Question Paper contains 8 printed pages.
(Section A, B, C & D)

Sl.No. 0347

11 (E)

(JULY, 2018)
(NCERT SRT)

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

Instructions :

1) **All the questions are compulsory.**
2) **The question paper consists of 30 questions divided into four sections A, B, C and D. Section A comprises of 8 questions of one mark each. Section B comprises of 6 questions of two marks each. Section C comprises of 10 questions of 3 marks each & Section D comprises of 6 questions of 5 marks each.**
3) **All questions in Section A are to be answered in one word or one sentence. The Section B, C & D are to be answered as per requirement of question.**
4) **There is no overall choice.**
5) **Use of calculator is not permitted.**

SECTION - A

■ **Answer the following questions (Q.No.1 to 8) in short. Each question carries 1 mark.**

1) a) Write the formula used to determine the maximum number of electrons which a shell in an atom can accommodate.

   b) Write the electronic configuration of the element carbon. **[1]**

2) What is geothermal energy? **[1]**

3) Name the following in the digestive system of human beings: **[1]**

   a) The substance which facilitates the action of pepsian.

   b) The structure which increases the area of absorption in small intestine.

4) Why is CNG considered an environment friendly fuel? [1]

5) List any two activities controlled by cerebellum. [1]

6) Which phenomenon of light is responsible for its dispersion reflection or refraction? [1]

7) Why do ionic compounds have high boiling point? [1]

8) Why is a normal eye not able to see clearly the objects placed closer than 25 cm? [1]

SECTION - B

■ **Answer the following questions (Q.No. 9 to 14) in short. Each question carries 2 marks.**

9) State briefly how the formation of micelles help to clean the clothes having oily spots. [2]

10) What are trophic levels? Give an example of a food chain and state the different trophic levels in it. [2]

11) "The magnification produced by a spherical mirror is –3". List four informations you obtain from this statement about the mirror/image. [2]

12) Balance the following chemical equations: [2]

a) $HNO_3 + Ca(OH)_2 \rightarrow Ca(NO_3)_2 + H_2O$

b) $Fe_2O_3 + CO \rightarrow Fe + CO_2$

c) $NaOH + H_2SO_4 \rightarrow Na_2SO_4 + H_2O$

d) $MnO_2 + Al \rightarrow Mn + Al_2O_3$

13) Name the hormone secreted by the gland which are associated with the following problems: [2]

a) A girl has grown extremely tall.

b) A women has swollen neck.

14) State Ohm's law? Draw a circuit diagram showing the arrangement of the apparatus used in an experiment to verify Ohm's law. [2]

SECTION - C

■ **Answer the following questions (Q.No. 15 to 24) in brief. Each question carries 3 marks.**

15) What were the limitations of Newland's law of octaves? [3]

16) Write the names of following: **[3]**

a) $CH_3CH_2-C \equiv CH$

b) CH_3CH_2OH

c) CH_3COCH_3

17) a) What will happen when the egg is not fertilized?

b) Draw and label the longitudinal section of a flower. **[3]**

18) Why is variation beneficial to the species but not necessarily for the individual? **[3]**

19) Distinguish between exhaustible and in-exhaustible resources of energy. Give one examples for each. **[3]**

20) Why does the sun appear reddish early in the morning? Will this phenomenon be observed by an observes on the moon? Justify your answer. **[3]**

21) Explain the effect on force acting on a current carrying conductor placed in a magnetic field. **[3]**

22) Name the property the tendrils of a pea plant have in order to circle around an object. Explain how it happens & how the plant is benefitted by it. [3]

23) In the electrolysis of water: [3]

a) Name the gas collected at the cathode and anode respectively.

b) Why is the volume of one gas collected at one electrode double that at the other? Name this gas.

c) How will you test the evolved gases?

24) What is electric motor? Explain the principle and draw a labelled diagram of electric motor. [3]

SECTION - D

■ **Answer the following questions (Q.No. 25 to 30) in detail. Each question carries 5 marks.**

25) a) Explain how heart works as a pump inside human beings.

b) Draw a sectional view of human heart. [5]

26) Write the name and symbols of two most reactive metals. Explain by drawing electronic structure, how any one of the two metals react with a halogen. State any four physical properties of compound formed. **[5]**

27) a) Describe the importance of pH in everyday life. Discuss any two in detail.

b) How sodium hydroxide is used in industries? **[5]**

28) a) Define centre of curvature of a sphericall lens.

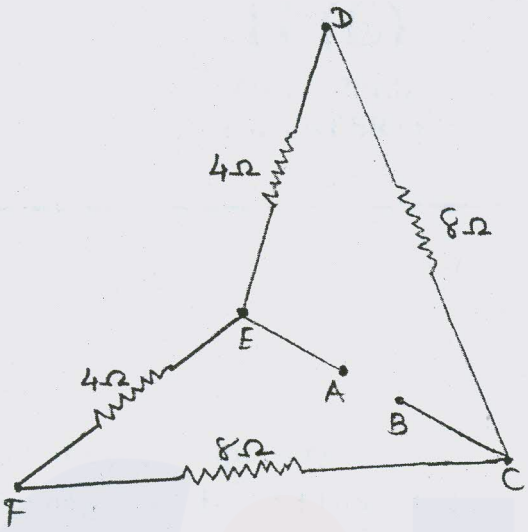
b) A divergent lens has a focal length of 20 cm. At what distance should an object of height 4 cm be placed from the centre of the lens. So that its image is formed 10 cm away from the lens. Find the size of the image also.

c) Draw a ray diagram to show the formation of image in the above situation. **[5]**

29) a) What is speciation? List four factors responsible for speciation.

b) Differentiate between homologous and analogous organs. **[5]**

30) a) Calculate the equivalent resistance of the circuit A and B are the terminals of a battery.



b) A wire of given material having length '*l*' and area of cross-section 'A' has a resistance of 27Ω. What would be the resistance of the same material having length $l/3$ and area of cross-section 3A?

[5]