CBSE 10th Science 2016 Unsolved Paper
All India

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TIME - 3HR. | QUESTIONS – 36

THE MARKS ARE MENTIONED ON EACH QUESTION

SECTION - A

Q.1 Write the name and structure of an alcohol with three carbon atoms in its molecules? *1 mark*

Q.2 What happens when a mature spirogyra filament attains considerable length? *1 mark*

Q.3 The depletion of ozone layer is a cause of concern. why? *1 mark*

Q.4 Name the type of mirrors used in the design of solor furnaces. explain how high temperature is achived by this device. *2 marks*

Q.5 "What was chipko andolan"? How did this andolan ultimately benefit the local people and the enviroment ? *2 marks*

Q.6 "Burning of fossil fuels results in global warming". Give reasons to justify this statement. *2 marks*

Q.7 Write chemical equation of the reaction of ethanoic acid with the following: *2 marks*

a. **Sodium;**
b. **Sodium hydroxide;**
c. **Ethanol.**

Write the name of the main product of each reaction.

Q.8 An aldehyde as well as a ketone can be represented by the same molecular formula, say C_3H_6O Write their structure and name them. State the relation between the two in the language of science. *3 marks*

Q.9 An element 'X' belongs to 3rd period and group 16 of the modern periodic table.

a. **Determine the number of valence electrons and the valency of 'X'.**
b. **Moleculer formula of the compound when X' reacts with hydrogen and write its electron dot structure.** *3 marks*
c. **(C) Name the element X' and state whether it is metallic or non-metallic.**

Q.10 An element 'X' has mass number 35 and number of neutrons 18. Write aromic number and electronic configuration of 'X'. Also write group number, period number and valency of 'X'. *3 marks*

Q.11 Define reproduction. How does it help in providing stability to the population of species? *3 marks*

Q. 12 Explain the term "Regeneration" as used in relation to reproduction of organisms. Describe briefly how regeneration is carried out in multicellular organisms like hydra. *3 marks*

Q.13 (a) List two reasons for the appearance of variations among the progeny formed by sexual reproduction. *3 marks*

(i) Name the part marked 'A' in the diagram.

(ii) How does 'A' reaches part 'B'?

(iii) state the importance of the part 'C'.

(iv) What happens to the part marked 'D' after fertilization is over?

Q.14 How do mendel's experiment show that traits are inherited independently? *3 marks*

Q.15 "Two areas of study namely 'evolution'and 'classification'are interlinked". Justify this statement. *3 marks*

Q. 16 The image of an object formed by a mirror is real, inverted and is of magnification -1. If the images is at a distance of 40 cm from the mirror, where is the object placed? Where would the image be if the object is moved 20 cm towards the mirror? State reason and also draw ray diagram for the new position of the object to justify your answer. *3 marks*

Q. 17 Describe an activity to show that the colors of white light splatted by a glass prism can be recombined to get white light by another identical glass prism also draw ray diagram to show the recombination of the spectrum of white light. *3 marks*

Q.18 The activities of man had adverse effects on all forms of living organisms in the biosphere. Unlimited exploitation of nature by man disturbed the delicate ecological balance between the living and non-living components of the biosphere. The unfavorable conditions created by man himself threatened the survival not only of himself threatened the survival not only of himself but also of the entire living organisms on the mother earth. One of your classmates is an active member of 'Eco club' of your school which is creating environmental awareness amongst the school students, spreading the same in the society and also working hard for preventing environmental degradation of the surroundings. *3 marks*

a. **why is it necessary to conserve our environment?**
b. **State the importance of green and blue dust-bins in the safe disposal of household waste.**
c. **List two values exhibited by your classmate who is an active member of Eco-club of your school?**

Q.19 A carbon compound 'P' on heating with excess conc H_2SO_4 forms another carbon compound 'Q' which on addition of hydrogen in the presence of nickel catalyst forms a saturated carbon compound 'R' One molecule of 'R' on combustion forms two molecules of carbon dioxide and three molecule of water. Identify P, Q and R and write chemical equations for the reactions involved. *3 marks*

Q. 20 What is placenta? Describe its structure. State its functions in case of a pregnant human female. *5 marks*

Q. 21 Define evolution. How does it occur? Describe how fossils provide us evidences in support of evolution. *5 marks*

Q.22 It is desired to obtain an erect image of an object, using concave mirror of focal length of 12 cm. *5 marks*

i. **What should be the range of distance of an object placed in front of the mirror?**
ii. **Will the image be smaller or larger than the object. Draw ray diagram to show the formation of image in this case.**
iii. **Where will the image of this object be, if it is placed 24 cm in front of the mirror? Draw ray diagram for this situation also to justify your answer.**

Show the positions of pole, principal focus and the centre of curvature in the above ray diagrams.

Q.23 (a) Define optical centre of a spherical lens. *5 marks*

(b) A divergent lens has a focal length of 20 cm. At what distance should an object of height 4 cm from the optical centre of the lens be placed 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 above situation.

Q.24 What is atmospheric refraction ? Use this phenomenon to explain the following natural events. *5 marks*

(a) Twinkling of stars

(b) Advanced sun-rise and delayed sun-set.

Draw diagrams to illustrate your answers.

Q. 25 A student puts a drop of reaction mixture of a saponification reaction first on a blue litmus paper and then on a red litmus paper. He may observe that: *1 marks*

(a) There is no change in the blue litmus paper and the red litmus paper turns white.

(b) There is no change in the red litmus paper and the blue litmus paper turns red.

(c) There is no change in the blue litmus paper and the red litmus paper turns blue.

(d) No change in color is observed in both the litmus papers.

SECTION - B

Q.26 For preparing soap in the laboratory we require an oil and a base. Which of the following combinations of an oil and a base would be best suited for the preparation of soap? *1 mark*

(a) Castor oil and calcium hydroxide

(b) Turpentine oil and sodium hydroxide

(c) Castor oil and sodium hydroxide

(d) Mustard oil and calcium hydroxide

Q.27 In the neighbourhood of your school, hard water required for an experiment is not available. Select from the following groups of salts available in your school, a group each member of which, if dissolved in distilled water, will make it hard: *1 mark*

(a) Sodium chloride, calcium chloride

(b) Potassium chloride, sodium chloride

(c) Sodium chloride, magnesium chloride

(d) Calcium chloride, magnesium chloride

Q.28 A student while observing an embryo of a pea seed in the laboratory listed various parts of the embryo as given below: Testa, Tegmen, Radicle, Plumule, Micropyle, Cotyledon. On examining the list the teacher remarked that only three parts are correct. Select three correct parts from the above list: *1 mark*

(a) Testa, Radicle, Cotyledon

(b) Tegmen, Radicle, Micropyle

(c) Cotyledon, Plumule, Testa

(d) Radicle, Cotyledon, Plumule

Q.29 If you are asked to select a group of two vegetables, out of the following, having homologous structures which one would you select? *1 mark*

(a) Carrot and radish

(b) Potato and sweet potato

(c) Potato and tomato

(d) Lady finger and potato

Q.30 To determine the approximate value of the focal length of a given concave mirror, you focus the image of a distant object formed by the mirror on a screen. The image obtained on the screen, as compared to the object is always: *1 mark*

(a) Laterally inverted and diminished

(b) Inverted and diminished

(c) Erect and diminished

(d) Erect and highly diminished

Q.31 Suppose you have focused on a screen the image of candle flame placed at the farthest end of the laboratory table using a convex lens. If your teacher suggests you to focus the parallel rays of the sun, reaching your laboratory table, on the same screen, what you are expected to do is to move the : *1 mark*

(a) lens slightly towards the screen

(b) lens slightly away from the screen

(c) lens slightly towards the sun

(d) lens and screen both towards the sun

Q.32 In your laboratory you trace the path of light rays through a glass slab for different values of angle of incidence (< i) and in each case measure the values of the corresponding angle of refraction (< r) and angle of emergence (< e). On the basis of your observations your correct conclusion is : *1 mark*

(a) <i is more than <r, but nearly equal to <e

(b) <i is less than <r, but nearly equal to <e

(c) <i is more than <e, but nearly equal to <r

(d) <i is less than <e, but nearly equal to <r

Q.33 In the following ray diagram the correctly marked angle are: *1 mark*

(a) <I and <e
(b) <A and <D
(c) <I,<e and <D
(d) <r, <A and <D

Q.34 A student adds a spoon full of powdered sodium hydrogen carbonate to a flask containing ethanoic acid. List two main observations, he must note in his note book, about the reaction that takes place. Also write chemical equation for the reaction. *2 marks*

Q.35 A student is observing a permanent slide showing sequentially the different stages of asexual reproduction taking place in yeast. Name this process and draw diagrams, of what he observes, in a proper sequence. *2 marks*

Q.36 An object of height 2.5 cm is placed at a distance of 15 cm from the optical centre 'O' of a convex lens of focal length 10 cm. Draw a ray diagram to find the position and size of the image formed. Mark optical centre 'O', principal focus F and height of the image on the diagram. *2 marks*