

SUMMATIVE ASSESSMENT-II, 2017

SCIENCE

Class X

Time : 3 hrs.

M.M. : 90

Name of the student _____ Section _____ Date – 04.03.2017 (Saturday)

General Instructions :

- The question paper comprises two Sections, A and B. You are to attempt both the sections.
- All questions are compulsory.
- There is no choice in any of the questions.
- All questions of Section-A and all questions of Section-B are to be attempted separately.
- Question numbers **1 to 3** in Section-A are **one mark** questions. These are to be answered in **one word or in one sentence**.
- Question numbers **4 to 6** in Section-A are **two marks** questions. These are to be answered in about **30 words** each.
- Question numbers **7 to 18** in Section-A are **three marks** questions. These are to be answered in about **50 words** each.
- Question numbers **19 to 24** in Section-A are **five marks** questions. These are to be answered in about **70 words** each.
- Question numbers **25 to 33** in Section-B are multiple choice questions based on practical skills. Each question is a **one mark** question. You are to select one most appropriate response out of the four provided to you.
- Question numbers **34 to 36** in Section-B are questions based on practical skills. Each question is a **two mark** question.
- Please check that this question paper contains 05 printed pages.

SECTION – A

- Q.1** Which group of elements are called alkali metals. (1)
- Q.2** Write the role of placenta in human female. (1)
- Q.3** Define the term 'food chain'. (1)
- Q.4** A man can read the number of a distant bus clearly but he finds difficulty in reading a book. From which defect of the eye he is suffering from ? What type of spectacles lens should be used to correct the defect? (2)
- Q.5** What are 'kulhs' ? Describe briefly. (2)
- Q.6** Explain in short the concept of sustainable development. (2)
- Q.7** Give reason for the following observations – (3)
- a) The element carbon forms a very large number of compounds.
 - b) Air holes of a gas burner have to be adjusted when the heated vessels get blackened by the flame.
 - c) Use of synthetic detergents causes pollution of water.

- Q.8** An element A reacts with oxygen to form A_2O . (3)
- State the number of electron in the outermost orbit of A.
 - To which group of periodic table does A belong ?
 - State whether element A is a metal or a non metal.
- Q.9** a) Identify the product (X) formed in the following reaction. (3)
- $$CH_3CH_2OH \xrightarrow[conc. H_2SO_4]{443 K} X + H_2O$$
- What is the function of concentrated sulphuric acid in the above reaction?
 - Draw the structure of 2-Bromopentanoic acid.
- Q.10** In modern periodic table, calcium (atomic no 20) is surrounded by the elements with atomic number 12, 19, 21 and 38. (3)
- Which of these elements are having physical and chemical properties resembling calcium?
 - Which of these has largest atomic size and which has smallest atomic size?
 - Which of these has maximum tendency to lose electrons & why ?
- Q.11** Distinguish between acquired characters and inherited characters along with example of each. (3)
- Q.12** a) Give the differences between pollination and fertilisation. (Two points) (3)
- Write the role of stigma in a flower.
- Q.13** How do Mendel's experiments show that traits may be dominant or recessive ? (3)
- Q.14** Differentiate between the following : (3)
- Fission in Amoeba and Plasmodium.
 - Self pollination and Cross pollination
 - Fragmentation and Regeneration
- Q.15** Explain the term 'analogous organs' and 'homologous organs' with example of each. (3)
- Q.16** Draw ray diagrams showing the image formation by a convex mirror when an object is placed. (3)
- At infinity.
 - At finite distance from the mirror.
- Q.17** The sun is visible two minutes before actual sunrise and two minutes after sunset. Give reason. (3)
- Q.18** There are certain NGO's which motivate the general public to donate clothes, books, toys, stationery items, utensils etc. These NGO's further segregate and distribute these items to the needy. (3)

Read the given passage and answer the following questions.

- i) In your opinion what are the objectives fulfilled by these initiative?
- ii) How does three R's come into play in this initiative?
- iii) What value is associated with this passage?

Q.19 a) What are unsaturated hydrocarbons? Out of saturated and unsaturated hydrocarbons which are more reactive & why ? (5)

b) Distinguish between ethane & ethyne by a suitable test.

c) Write the name of next homologue of CH_3OH and HCOOH .

d) How does boiling point and melting point of hydrocarbons change with increase in molecular mass?

Q.20 a) What are fossils ? (5)

b) What is speciation? Write minimum two factors which leads to speciation.

Q.21 a) Draw a well labelled diagram of human female reproductive system. (minimum 4 labellings) (5)

b) Where are sperms produced in the body of human male?

c) Name one male hormone and its role. (In human beings)

Q.22 An object 5cm high is held 25 cm from a converging lens of focal length 10 cm. Draw a ray diagram and find the position, size and the nature of the image formed. (5)

Q.23 a) Define principal focus of a spherical mirror and optical centre of a spherical lens. (5)

b) A concave mirror produces three times magnified real image of an object placed at 10 cm in front of it. Where is the image located?

Q.24 a) How can we explain the reddish appearance of the sun at sunrise or sunset? (5)

b) A person needs a lens of power -5.5 dioptre for correcting his distant vision. For correcting his near vision he needs a lens of power +1.5 dioptre. What is the focal length of lens required for correcting –

i) Distant vision

ii) Near vision

SECTION – B

Q.25 The reaction in which fat or oil is hydrolysed by caustic soda (NaOH) is called. (1)

a) Saponification b) Hydrolysis c) Esterification d) Decarboxylation

Q.26 Which of the following are present in hard water ? (1)

a) $\text{Ca}(\text{HCO}_3)_2$ b) CaCl_2 c) KCl d) Both a and b

Q.27 Pure acetic acid is known as glacial acetic acid because – (1)

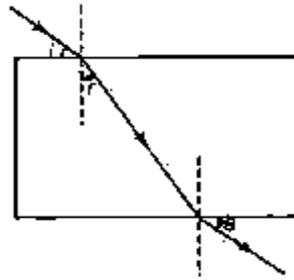
a) It is transparent like glass

b) It freezes in winter.

c) It is colourless

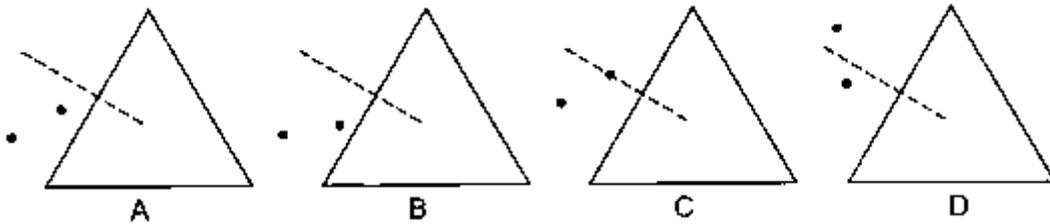
d) It is found in glaciers

- Q.28** A student traces the path of a ray of white light through a rectangular glass slab and marks the angle of incidence $\angle i$, refraction $\angle r$ and emergence $\angle e$ as shown. Which angle or angles has he not marked correctly? (1)



- a) $\angle i$ only b) $\angle i$ and $\angle r$ c) $\angle i$ and $\angle e$ d) $\angle r$ and $\angle e$

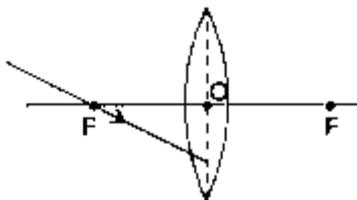
- Q.29** Four students A, B, C and D perform experiment on tracing the path of light ray through a glass prism. The position of the pins used to describe incident ray is shown on paper by four of them, as – (1)



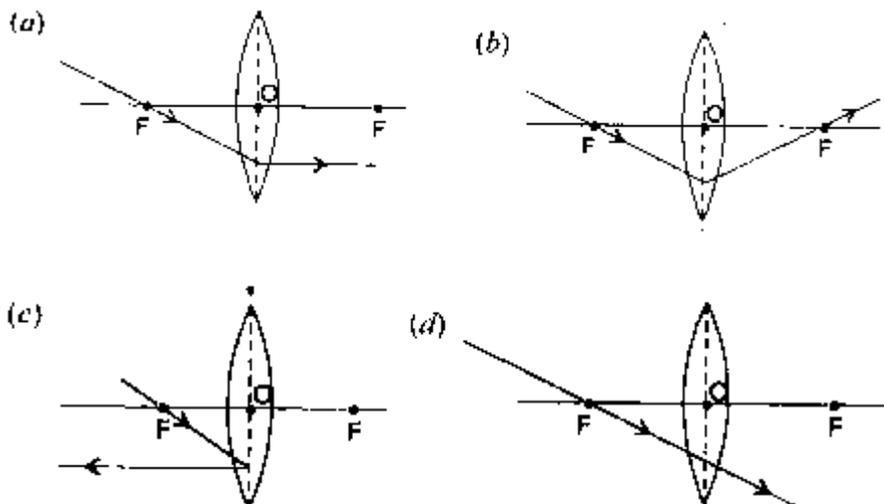
The correct result is obtained by –

- a) A and B both b) B and C both
c) A and D both d) A only

- Q.30** Study the diagram given below – (1)

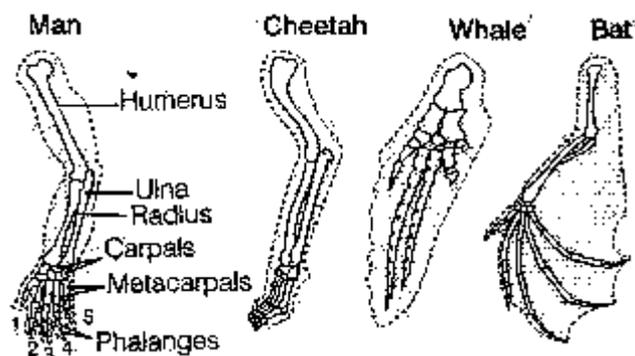


The diagram showing the correct path of the ray after refraction from the convex lens is –



- Q.31** In an experiment to trace the path of a ray of light through a glass prism, the emergent ray obtained : (1)
- is parallel to the incident ray.
 - is perpendicular to the incident ray.
 - bends at an angle to direction of incident ray.
 - is parallel to the refracted ray.

- Q.32** The structure depicts the forelimb of Man, Cheetah, Whale and Bat in case of animals – (1)



What these organs represent –

- Homologous organs
 - Analogous organs
 - Vestigial organs
 - None of these
- Q.33** Which part of dicot seed develops into shoot? (1)
- cotyledons
 - plumule
 - radical
 - none of these
- Q.34** Draw diagrams of the four stages of budding in yeast. (2)
- Q.35** Acetic acid was added to a solid X kept in a test tube. A colourless, odourless gas Y was evolved. The gas was passed through lime water, which turned milky. (2)
- Identify X and Y in the above reaction.
 - Write the chemical reactions involved after identification of X and Y.
- Q.36** To determine the focal length of a concave mirror, a student focusses a classroom window, a distance tree and the sun on the screen with the help of a concave mirror. In which case will the student get more accurate value of focal length? Give reason. (2)

