SUMMATIVE ASSESSMENT-II (2013-14)

CLASS-X

SUBJECT : SCIENCE

Time : 3 hrs. **M.M.: 90**

General Instructions :

(i) ***The question paper comprises of two Sections, A and B. You are to attempt both the sections.***

(ii) ***All questions are compulsory.***

(iii) ***There is no choice in any of the questions.***

(iv) ***All questions of Section-A and all questions of Section-B are to be attempted separately.***

(v) ***Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence.***

(vi) ***Question numbers 4 to 7 in Section-A are two marks questions. These are to be answered in about 30 words each.***

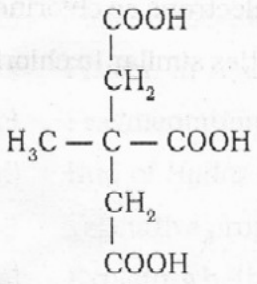
(vii) ***Question numbers 8 to 19 in Section-A are three marks questions. These are to be answered in about 50 words each.***

(viii) ***Question numbers 20 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.***

(ix) ***Question numbers 25 to 42 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.***

SECTION-A

Q1. The formula of citric acid is shown below : (1)



State the name of -COOH functional group in citric acid.

Q2. What types of flowers are called unisexual flowers? (1)

Q3. Mention the action taken by Government to save river Ganga. (1)

Q4. How are large dams built on rivers advantageous to us? Give any two advantages. (2)

Q5. What is chipko Movement? Why should we conserve forest? (2)

Q6. Find the radius of curvature of a spherical mirror whose focal length is of +1m. Mention the nature of this mirror. Give reason for your answer. (2)

Q7. A yellow seeded plant is crossed with a green seeded plant. (2)

(a) What type of a cross is it?

(b) What type of plants are obtained in F_2 generation? Write the ratio (phenotype).

Q8. Two elements X and Y have atomic number 12 and 16 respectively. (3)

(a) Write the electronic configuration of both

(b) Which type of bond will they form?

(c) Write the formula of the compound formed by their combination (in terms of X and Y).

Q9. The electronic configuration of 4 elements A, B, C, and D is given under : (3)

A - 2, 8

B - 2, 8, 1

C - 2, 8, 2

D - 2, 8, 8

(a) Which of them belong to the same period? Name the period.

(b) Which of them belong to the same group? Name the group.

(c) Which amongst them would form (i) Mono valent cation (ii) Divalent cation.

Q10. Cl (17) is surrounded by F (9), S (16), Ar (18) and Br (35) in the Modern Periodic Table. (3)

(a) Which amongst them would have same number of

(i) Shells as Chlorine (ii) Valence electrons as chlorine

(b) Which amongst them would have chemical properties similar to chlorine?

Q11. Complete the conversion of the following : (3)

(i) $CH_3CH_2CH_2OH \xrightarrow[K_2Cr_2O_7]{\text{acidified}}$

(ii) $CH_3COOH + Na \longrightarrow$

(iii) $CH_3CH_2OH \xrightarrow[\text{heat}]{\text{conc. } H_2SO_4}$

Q12. What does analogy of organs indicate. Explain with example. (3)

Q13. The process of fragmentation is not true for all multicellular organisms. Give three reasons in support of this statement. (3)

Q14. Can we find variations in an asexually reproducing organism like bacteria? Write Yes or No and give a reason in support of your answer. (3)

Q15. Name the type of asexual reproduction demonstrated by the following organisms : (3)

(a) Amoeba (b) Rhizopus

(c) Planaria (d) Plasmodium

(e) Spirogyra (f) Bryophyllum

Q16. A person is not able to see distinctly the objects placed before 90 cm from it. Identify the defect in his eye. Determine the nature, the focal length and the power of lens used to correct the defect. (3)

Q17. An object is placed at a distance of 20 cm from a concave mirror of radius of curvature 60 cm. Find the position and nature of image formed by the mirror. Also find magnification produced by mirror. (3)

Q18. What is a prism? Explain the term dispersion of light. Illustrate with a diagram the phenomenon of dispersion through it. (3)

Q19. You plan to organise a campaign on 'Harmful effects of burning of crackers on human health' in your neighbourhood areas and guide them. (3)

(a) How will you convince the people not to burn crackers? List any three arguments.

(b) State three values that are inculcated with such approach?

Q20. Describe the addition reaction of carbon compounds with its use. State the function of catalyst in this reaction. (5)

Q21. Differentiate between the following :

(a) Pollen tube and Style

(b) Fission in *Amoeba* and *Plasmodium*

(c) Fragmentation and Regeneration

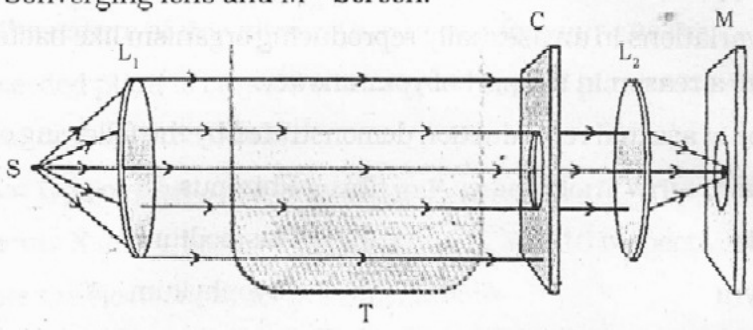
(d) Bud of *Hydra* and bud of *Bryophyllum*

(e) Vegetative propagation and Spore formation (5)

Q22. (a) Explain whether traits like eye colour or height is genetically inherited. Do power to lift weights and reading French also belong to the same category?

(b) How do variations affect the evolution of those organisms that reproduce sexually? (5)

Q23. The given figure shows an experimental set up for observing a phenomenon of light in colloidal solution. S - Source of Light, L_1 - Converging lens, T - Tank, C - Circular hole, L_2 - Converging lens and M - Screen. (5)



(i) Name the components dissolved in tank T to obtain a colloidal solution.

(ii) Describe the observation made on sending light from the source S. from all the sides of tank.

(iii) Name the natural phenomenon that can be explained on the basis of this experiment and draw its diagram.

Q24. (a) What is Tyndall effect? Explain why is it visible in forests?

(b) Give reasons with appropriate diagram :

(i) Why does sun appear to rise early than actual sunrise?

(ii) Why planets do not twinkle like stars? (5)

SECTION-B

Q25. When the stopper of a bottle containing colourless liquid was removed, the bottle gave out a smell like that of vinegar. The liquid in the bottle could be : (1)

(a) Hydrochloric acid solution

(b) Sodium hydroxide solution

(c) Acetic acid

(d) Saturated sodium bicarbonate solution

Q26. To test the presence of CO_2 evolved during the reaction between acetic acid and sodium bicarbonate, it is passed through : (1)

(a) Lime water (b) Soda lime

(c) lime (d) Lime stone

Q27. Soaps are prepared by the alkaline hydrolysis of : (1)

(a) Salts (b) Carboxylic acids

(c) Esters (d) Alcohols

Q28. In a saponification reaction, fats and oils are treated with : (1)

(a) A strong acid (b) A weak base

(c) A weak acid (d) A strong base

Q29. Name of the salt from the following which makes the water hard is : (1)

(a) calcium hydrogen carbonate (b) potassium chloride

(c) sodium carbonate (d) sodium bicarbonate

Q30. A convex lens forms full image of an object. If half of the lens is covered by an opaque paper, then : (1)

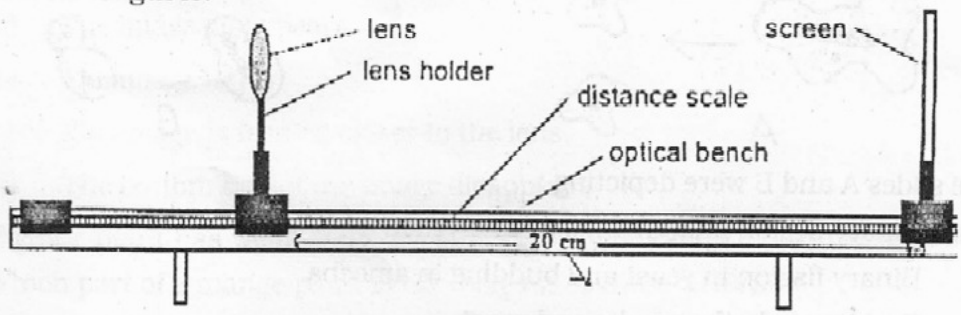
(a) half image is not seen

(b) full image of same intensity is seen

(c) full image but of less intensity is seen

(d) half image of same intensity is seen

Q31. During an experiment to find out the focal length of convex lens, a student got a clear image of a test object at a far distance on the screen but he did some mistake in making measurements i.e. shown below in diagram. The mistake he did while finding the focal length is:



(a) Distance of screen from object was not measured.

(b) Object distance was not measured.

(c) lens was not adjusted properly.

(d) Distance of image was not measured from the optical center of the lens.

Q32. In an experiment to trace the path of a ray of light through a rectangular glass slab, four students A, B, Cland D tabulated their observations as given below : (1)

Student	A	B	C	D
∠i	60°	60°	60°	60°
∠r	55°	55°	40°	35°
∠e	60°	62°	56°	60°

The student who has performed the experiment carefully and got the correct result is:

(a) A (b) B

(c) C (d) D

Q33. While performing experiment with rectangular glass slab a student observed that a ray of light, on passing from one medium to another medium changes its path in the second medium. This is called : (1)

(a) reflection (b) refraction

(c) scattering (d) Tyndall Effect

Q34. Ravi observed a slide under microscope and confirmed it as binary fission in Amoeba. He said it because : (1)

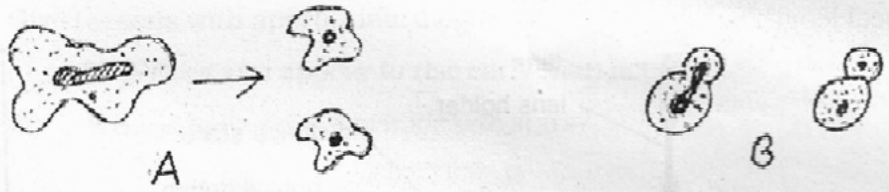
(a) Amoeba has elongated nucleus with a constriction in the centre.

(b) Amoeba has only a single nucleus.

(c) Only division of cytoplasm occurs.

(d) Amoeba has two separate nuclei.

Q35. Neha observed slide A and B which showed stages of asexual reproduction in two different organisms : (1)



The slides A and B were depicting :

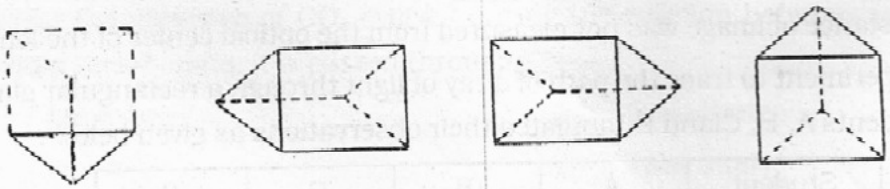
(a) Binary fission in both amoeba and yeast.

(b) Binary fission in yeast and budding in amoeba.

(c) Budding in both amoeba and yeast.

(d) Binary fission in amoeba and budding in yeast.

Q36. A student while doing experiment could not place the prism accurately on the table. The better way to place the prism while doing experiment is : (1)



(1) Vertical (2) Horizontal (3) Horizontal (4) Vertical

(a) fig. 1 and 2 (b) fig. 2 and 3

(c) fig. 3 and 4 (d) fig. 4

Q37. In an experiment to trace the path of ray of light through a glass slab, which of the following relationship is correct? (1)

(a) $\angle i = \angle e > \angle r$ (b) $\angle i < \angle r < \angle e$

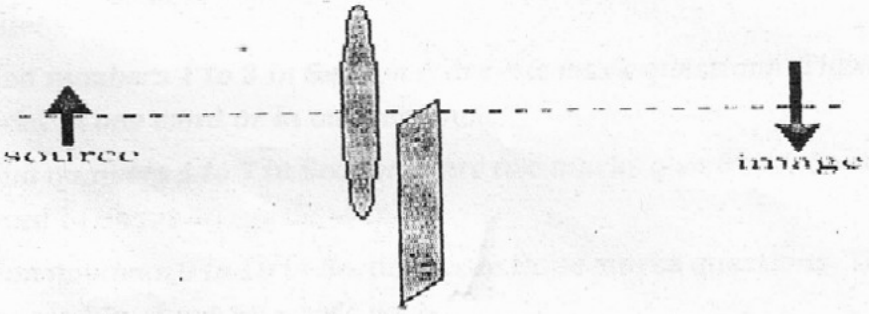
(c) $\angle i = \angle e < \angle r$ (d) $\angle i = \angle r > \angle e$

Q38. If the object distance for a converging lens is less than its focal length, the image will be (1)

(a) real and erect (b) real and inverted

(c) virtual and erect (d) virtual and inverted

Q39. An image is formed by a converging lens. Suppose the bottom half of the lens in covered, as shown, the expected changes to image will be :



(a) The image disappears.

(b) The image fades

(c) The image is formed closer to the lens.

(d) The bottom half of the image disappears.

Q40. A grape plant has weak stem. It twines around a support with the help of tendrils. Which part of a mango plant is homologous to these tendrils? (1)

(a) leaf (b) stem

(c) root (d) fruit

Q41. The spines of cacti and euphorbia plant are examples of : (1)

(a) analogous organs (b) vestigial organs

(c) morphological organs (d) homologous organs

Q42. Identify the parts labelled 1 and 2 in the adjoining figure. (1)

(a) 1 - micropyle, 2 - epicotyl

(b) 1 - cotyledon, 2 - embryo

(c) 1 - radicle, 2 - plumule

(d) 1 - plumule, 2 - radicle