

65048/X/086/2012-13
SUMMATIVE ASSESSMENT – II
SUBJECT : SCIENCE

DATE : 19-03-13

ROLL NO. _____

Time : 3 Hours

M.M. : 90

General Instructions :

- (i) The questions paper comprises of two Section, A and B. You are to attempt both the sections.
- (ii) All questions are compulsory.
- (iii) There is no overall choice.
- (iv) All questions of Section-A and all questions of Section-B are to be attempted separately.
- (v) Questions number 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence.
- (vi) Questions numbers 4 to 7 in Section-A are two marks questions. These are to be answered in about 30 words each.
- (vii) Questions numbers 8 to 19 in Section-A are three marks questions. These are to be answered in about 50 words each.
- (viii) Questions numbers 20 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
- (ix) Question number 25 to 42 in Section-B are multiple choice based on practical skills. Each questions is a one mark questions. You are to select one mot appropriate response out of the four provided to you.

SECTION-A

1. What is soap chemically ? 1
2. Why is the decreasing number of surviving tigers a cause of worry from the point of view of genetics ? 1
3. State the meaning of watershed management. 1
4. Write any two difference between biodegradable and non-biodegradable substances by giving example of each from our daily life. 2

SCIENCE-X-1

5. What is significance of sustainable development ? 2
6. Identify whether the device is a spherical mirror or lens in the following cases. 2
- (a) Object is placed between device and its focus and image formed is enlarged and behind the device.
- (b) Object is placed between device and focus, image formed is enlarged and formed on the same side of the object. Justify your answer with diagram.
7. Identify among the following organism which is reproduced by sexual and which by asexual method ? 2

Amoeba, human beings, whale, hydra, spirogyra, dog.

8. Elements A, B, C, D and E have the following electronic configuration. 3

	K	L	M
A	2	3	
B	2	8	1
C	2	8	5
D	2	8	7
E	2	8	8

- (1) Name element which belongs to the 2nd period.
- (2) Name two elements which will exhibit a valency of 1.
- (3) Name another element which will be placed in the same group as C.
9. Give three reasons to explain the use of carbon and its compounds as fuels. 3
10. Write the chemical equation for the following conversions, stating the essential conditions :
 (i) Ethanol to ethene (ii) Ethanol to ethanoic acid
11. Apart from the organic beings, where else do we find carbon ?
 Mention the form in which it is available there and also its percentage. 3
12. Sanya could not conceive even after 10 year of her marriage. On carrying out series of medical tests, it was found that both the oviducts of Sanya were blocked and she cannot become mother. Her friend Tina agreed to be the surrogate mother as Sanya's uterus was not healthy to hold the foetus. 3
- (a) Will Tina be real mother of the child ?
- (b) What moral value did Tina showed ?

13. Give reasons : 3
- (a) Testes is located outside the abdominal cavity.
 - (b) Regeneration is not considered a method of reproduction.
 - (c) Spores generally have a thick wall.
14. Mention the mechanism involved in the following contraceptive methods. 3
- (a) Blocking the fallopian tubes.
 - (b) Oral pills.
 - (c) Use of condom.
15. How can a change in colour give survival advantage to a species ? Explain it by giving a suitable example. 3
16. (a) State the factors on which the relative refractive index of a pair of media depends.
- (b) Light enters from air into water which has refractive index of 1.33. Calculate the speed of light in water. The speed of light in air is 3×10^8 m/s
17. (a) Define Power of a lens.
- (b) The image of an object formed by a convex lens is of same size as the object. If the image is formed at a distance of 50 cm from the lens, at what distance from the lens is the object placed ? Find the focal length and power of the lens used. 3
18. A convex mirror used for rear-view of an automobile has a radius of curvature 3.0 m. If a bus is located at 5.0 m from this mirror find the position, nature and relative size of the image. 3
19. What is ozone layer ? Explain giving equation how it is formed in the atmosphere. Mention its advantages to human beings. 3
20. (a) What are hydrocarbons ? Give examples. 5
- (b) Give the structural differences between saturated hydrocarbons and unsaturated Hydrocarbons with two examples each.
- (c) What is a functional group ? Give examples of two different functional groups.
21. The genotype of green stemmed tomato plants is denoted as GG and that of purple stemmed tomato plants as gg. When these two are crossed : 5
- (a) What colour of stem is expected in their F_1 progeny ?
 - (b) Give the percentage of purple stemmed plants if F_1 plants are self pollinated.

- (c) Find the ratio of genotypes GG and Gg in the F_2 progeny.
22. (a) Distinguish between homologous and analogous organs. Give one example of each kind. 5
- (b) Explain the importance of fossils in deciding evolutionary relationship between organisms ?
23. State the snell's law of refraction and express it mathematically. Using lens formula, find the position of image, its nature, and magnification formed by a convex lens of focal length 20 cm, when object is at 18 cm from it. Also draw the ray diagram to show image formation (not to scale) 5
24. Draw the ray diagram in each case to show the position, nature of image formed when the object is placed – 5
- (a) at the centre of curvature of concave mirror.
- (b) Within focal length of a convex lens
- (c) Between Pole and Focus of concave mirror
- (d) In front of a convex mirror
- (e) In front of a concave lens

SECTION – B

25. Given below are the observation reported by four student I, II, III and IV for the change observed by action of dil. Acetic acid on different material and its odour : 1

Student	Change in colour of litmus paper	With water	Smell	Solid NaHCO_3
A	Blue ? Red	Soluble	Vinegar	Brisk effervescence
B	Blue ? Red	Soluble	Rotten egg	No reaction
C	Red ? Blue	Soluble	Rotten egg	Brisk effervescence
D	Red ? Blue	Soluble	Vinegar	No reaction

Which students has made the correct observation ?

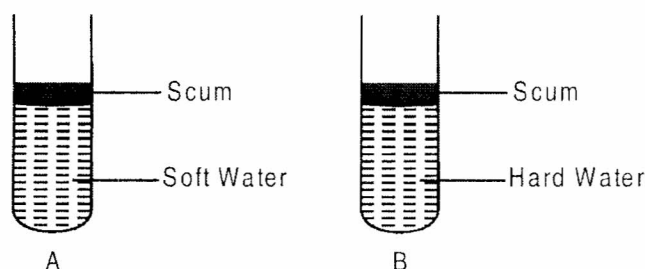
- (a) A (b) B
- (c) C (d) D

26. Four students A, B, C, and D were asked to study the properties of acetic acid. After performing the experiment they arrived at the following observation and recorded them in the form of a table given below. 1

The correct set of observations were reported by student :

Student	Litmus paper	Solubility in water	Odour	NaHCO ₃
A	Blue to red	Immiscible	Odour less	CO ₂ gas is evolved
B	Red to blue	Miscible	Burning smell	H ₂ gas is evolved
C	Blue to red	Miscible	Vinegar smell	CO ₂ gas is evolved
D	Red to blue	immiscible	Rotten egg smell	CO ₂ gas is evolved

- (a) A (b) B
 (c) C (d) D
27. While preparing soap the excess sodium hydroxide and salt in soap is removed by : 1
 (a) filtration (b) washing with water
 (c) evaporation (d) decantation
28. Soap prepared by the reaction between oil and sodium hydroxide is called : 1
 (a) soft soap (b) hard soap
 (c) both (a) and (b) (d) neither (a) or (b)
29. In which of the figures labelling is done correctly : 1



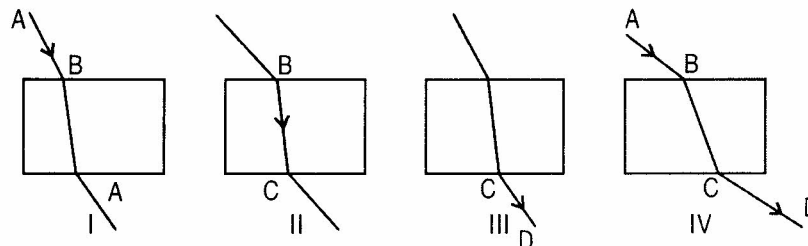
- (a) Both A and B (b) Only A
 (c) Only B (d) Both are wrongly marked
30. While performing the experiment to measure focal length of a convex lens a student placed lens at 30.8 cm on the optical bench and obtained clear image of a distant tree when screen was placed at 50.2 cm on it. Correctly measured focal length will be : 1
 (a) 30.8 cm (b) 50.2 cm

- (c) 25.1 cm (d) 19.4 cm

31. A student was asked to draw diagram for the formation of image of a distant object by a convex lens. He would show image : 1

- (a) at the focal plane of lens. (b) away from focal plane of lens.
 (c) before the focal plane of lens. (d) at any position before the lens.

32. Four students traced the path of a ray of light through a glass slab and obtained figure as shown below. Their teacher asked them to name in their respective figure the ray/rays of light that travels from rarer to denser medium. 1



Correct marking has been done in :

- (a) I (b) II
 (c) III (d) IV

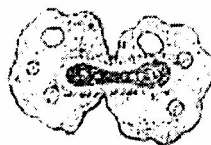
33. A student traces the path of ray of light through glass slab for a ray of light which is incident on a glass slab at an angle of incident 0° . The angle of refraction measured by him would be : 1

- (a) 90° (b) 0°
 (c) 30° (d) 45°

34. In *Opuntia*, the stem is modified to broad leaf like structure called : 1

- (a) Cladode (b) Phylloclade
 (c) Phyllocladode (d) Cladophyllode

35. Which kind of reproduction is observed by a student in this given slide under a microscope ? 1



- (a) Asexual (b) Sexual
 (c) Asexual and sexual (d) None of the above

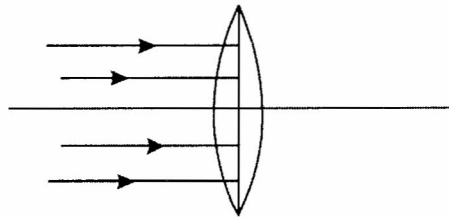
36. While washing hands a student applies soap to his hands and uses tap water. He observes that his hands have soapy touch but no lather is formed. He concludes that : 1

- (a) the soap is of poor quality (b) tap water is soft
(c) tap water is hard (d) tap water is acidic

37. Select true statement about the refraction of a ray of light through a glass prism. 1

- (a) The emergent ray is parallel to the incident ray and is slightly laterly displaced.
(b) The light ray bends towards the normal and becomes parallel to the base of the prism.
(c) The light ray suffers two refractions on passing through the prism and deviate towards the base through a certain angle from its original path.
(d) The light ray suffers two refractions on passing through the prism and deviate towards angle of prism through a certain angle from its original path

38. A beam of light parallel to the principal axis is incident on a convex lens as shown in figure. After refraction the rays : 1



- (a) pass through focus
(b) pass through $2f$
(c) remain parallel to principal axis
(d) get diverged

39. An old person wants to read small words of a book by magnifying them by a convex lens. He should place the lens in such a way that letters of the book are : 1

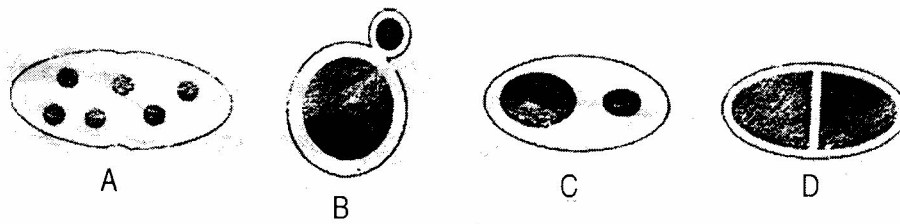
- (a) At $2F$ (b) At infinity
(c) Between optical and F (d) Between F and $2F$

40. Analogous organs have : 1

- (a) Different origin similar function
(b) Common origin common function
(c) Different origin different function
(d) Common origin different function

41. The budding in yeast is illustrated by the diagram.

1



Choose the most appropriate answer :

- | | |
|-------|-------|
| (a) A | (b) B |
| (c) C | (d) D |

42. After fertilization the fertilized egg is called :

1

- | | |
|-------------|------------|
| (a) oospore | (b) stamen |
| (c) carpel | (d) gamete |