SUMMATIVE ASSESSMENT – II (2016-17)   O2GFPH3

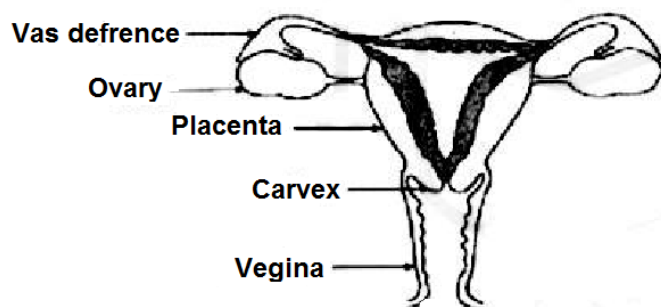### SCIENCE   Class – X

Section - A

1. State the number of groups and periods of modem periodic table.

2. A tall plant is crossed with a dwarf plant. What will be the ratio of homozygous tall and homozygous dwarf plants in F_2 generation?

3. Why are coal and petroleum called earth resources

4. List four characteristics of image formed by a plane mirror.

5. We need to use the fossil fuels judiciously. Give two reasons in agreement to the statement.

6. If a chemical enters a food chain composing of grass, lizards and insects. Judge which organism is likely to have maximum concentration of chemicals in its body and why?

7. Name any two other main elements apart from carbon which are present in coal and petroleum. Write the Chemical reaction when combustion of these elements takes place on burning of coal.

8. Complete the following table :

Element	Mg	C	F
Croup			
Period			

9. Why is Ethanoic acid named as glacial acid ? Why are mineral acids considered strong, acids while carboxylic acids are weak? Compare the expected pH value and the change in colour of pH paper in hydrochloric acid and Ethanoic acid using universal indicator.

10. An element has same number of electrons in its 1th and 4th shell as well as in 2nd and 3rd shell.

(a) Write electronic' configuration of the element. (b) Identify the element. (c) Mention the valency of the element

11. Explain how do proteins Control the characteristics in plants

12. Pick out the incorrectly labeled parts and correct these. Also mention the function of vagina.

13. 'Fossils are related to evolution"

(a) the statement, (b) How can the relationship between man and chimpanzee be done.

14. Variation is useful for the survival of species over long time. But the variants have unequal chances of survival. Explain this statement

15. The process of fragmentation is not true for all multicellular organisms. Give three reasons in support n this statement.

16. Explain rower of Accommodation. Explain in brief the near and the far point of an eye and give their values.

17. A 4.3 cm needle is pled 12 cm away frorn a convex mirror of focal length 15 cm. Find the location of image and magnification. Describe what happens to the image as the needle is moved farther from the mirror.
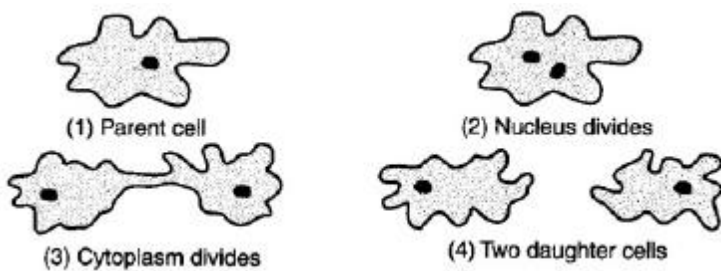
18 . World environment day is celebrated On 5th June to raise global awareness to protect nature and the planet Earth. It is run by the United Nations Environment Programme (UNEI). The paper of India uses, recycled paper to commemorate on this day.

(a) How does the use of recycled paper help in protecting the environment? (b) Mention any two values portrayed by The Paper of India group.

19. Convert CH_4 Into CCl_4 by substituting hydrogen atom with chlorine atom in successive reactions. Why this reaction is referred as a substitution reaction?

20. Give differences (a) Heredity and variations (b) Dominant anti recessive traits (c) Natural and artificial selection

21. (i) Identify the process depicted in the picture given below

(1) Parent cell
(2) Nucleus divides
(3) Cytoplasm divides
(4) Two daughter cells

(a) Name the organism that divides by the above process.

(b) Compare the above process with multiple fission.

(c) State the type of reproduction in the above process and define it

(ii) Differentiate between fission in amoeba and Leishmania.

22. State the natural phenomenon behind the formation of a rainbow? Explain the phenomenon, Name the device that can be used to observe such a phenornenon in laboratory. If you are facing d rainbow in the sky, what is the position of sun with respect to your position ?

23. (a) State laws of refraction of light (b) A converging lens form a real and virtual image of an object at a distance of 100 cm from it. Where should an object be placed in front of the lens so that the size of the image is twice the size of the object ? Also, calculate power of lens.

24. (a) Why does the clear sky appear blue ? How would the sky appear in the absence of earth's atmosphere?

(b) A person cannot see objects farther than 12 m front the eye firmly. Name the defect of vision he is suffering from and the type of lens that should be used for correction of this defect. Illustrate with a diagram how this lens will correct the defective vision.

SECTION - B

25. The process of formation of soap is known as

(a) Esterification   (b) saponification   (c) Decomposition   (d) neutralisation

26 The completion of saponification reaction is marked when :

(a) Red litmus turns blue (b) Red litmus turns colourless (c) Blue litmus turns red (d) Blue litmus turns colourless

27. Name of the salt from the following which makes the water hard is :

(a) Calcium hydrogen carbonate (b) potassium chloride (c) sodium carbonate (d) sodium bicarbonate

28. A lens of focal length 'f' is cut into two equal parts without affecting its curvature. The two pieces will have equal

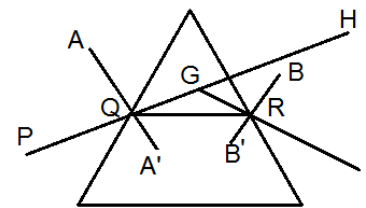focal length of : (a) f   (b) 2f   (c) f/2   (d) f/3

29. If a large number of thin black strips are painted on the concave mirror, the image of a distant white horse will be

(a) Like a Zebra (b) White (c) Dime white (d) Dark black

30 A student recorded the following sets of observations while performing an experiment "To trace the path of a ray of light passing through a rectangular glass slab for different angles of incidence".

S. No	Angle of incidence (<i)	Angle of refraction (<r)	Angle of emergence (<e)
I	41°	45°	41°
II	40°	38°	38°
III	45°	41°	40°
IV	45°	41°	45°

The correct observation is recorded at Sl. No. :   (a) I   (ii) II   (c) II   (d) IV

31 . To trace the path of light passing through a glass prism a student draws the following diagram.

(a) Angle of emergence and Jingle of deviation.

(b) Angle of emergence and Angle of refraction

(c) Angle of deviation and Angle of refraction

(d) Angle of deviation and angle of emergence.

32. Identify the correct grouping for homologous organs

(a) wings of birds, wings of insect   (b) wings of bat, wings of insect

(c) wings of bird, flippers of seal   (d) wings of insect, flippers of seal

33. In the experiment to study the structure of bean seed, if the seeds are soaked in glycerine instead of water. The possible consequence would be
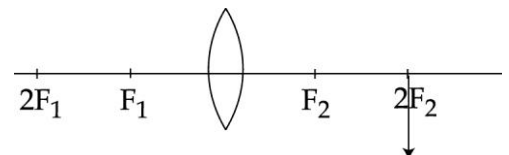
(a) Delayed germination of seeds.   (b) No germination of seeds,

(c) Improper growth of embryo.   (d) Proper growth of embryo

34.The following symbols A and B usually shown on the bottle of commercial acetic acid. What do these symbols indicate?

35 Yeast is a multi cellular organism which produces chain of cells attached to parent cell. Show it diagrammatically.

36. In the following ray diagram.

(i) What will be the position of the object?

(ii) Compare the size of image A' B' with the object.