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ERNAKULAM REGION

SUMMATIVE ASSESSMENT II 2013-14

CLASS X

SUBJECT : SCIENCE

MM90

TIME :3h

GENERAL INSTRUCTIONS

1. The question paper comprises of two sections, A & B. You are to attempt both the sections. All questions are compulsory.
2. Question no 1 to 3 carry 1 mark each. These are to be answered in one word or in one sentence.
3. Question numbers 4 to 7 carry two marks each to be answered in about 30 words each.
4. Question numbers 8 to 19 carry three marks each to be answered in about 50 words each.
5. Question numbers 20 to 24 carry 5 marks each to be answered in about 70 words each.
6. Question numbers 25 to 42 in Section B are multiple choice questions based on practical skills. Each question carries one mark. You are to select one most appropriate response out of four provided to you.

SECTION A

1. There are 7 electrons in the outermost 'L' shell of an element. Predict the period and group in the periodic table this element belongs to.
2. Name the scientist who came up with the idea of evolution of species by natural selection in 19th century.
3. A concave mirror produces the image of an object. The magnification produced is +2.
A] What is the nature of the image?
B] What is the position of object?
4. State Mendeleev's periodic law. Write any two limitations of Mendeleev's classification of elements.
5. What is the role of placenta in the developmental stages of an embryo?
6. Differentiate between homologous and analogous organs with an example.
7. What is meant by accommodation of eye? What is the range of vision for a normal human eye?
8. a) Name the male hormone in humans.
b) Name the organ which produces this hormone.
c) What is the role of this hormone in human body?

9. Fossils provide evidences for organic evolution.

a)What are fossils?

b)What are the different methods for estimating the age of fossils?

10.Government has declared a locality as a tiger reserve to protect the tigers. A group of local people of that area also joined the government in the effort of saving tigers and planted more forest trees and other vegetation in the area and near by.

A] In what way, this step by the local people help to increase the population of tigers in this area?

B] How does this step influence the other species of organisms in the forest ?

C] What is the value we learn from the act of the local people?

11. How is the sex of a child determined in human beings ? Explain.

12. Draw a neat labelled diagram showing the germination of pollen on the stigma of a flower.

13. What is speciation? Name two factors influencing the process of speciation.

14. a) State Snell's law of refraction.

b) The refractive indices of three media are given below.

Medium	A	B	C
Refractive index	1.65	1.71	1.47

A ray of light is travelling from A to B and another ray is travelling from B to C.

In which case a) the refracted ray bends towards the normal

b) the speed of light increases in the second medium?

15. How does the following features of elements change along a group in the periodic table?

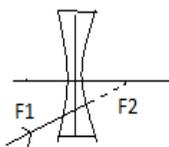
a)atomic radius

b)non-metallic nature

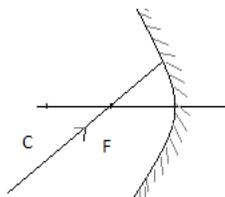
Give reason.

16. Draw the path way of light after its incidence on the lens/ mirror in the following figures.

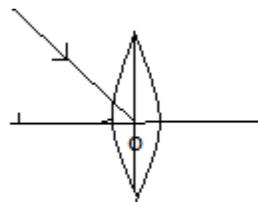
a)



b)



c)



17. Substance 'X' is an active ingredient of alcoholic drinks. Substance 'Y' is widely used as preservative of pickles. 'X' reacts with 'Y' to produce 'Z' with fruity smell.

a) Name Z

b) Name the reaction.

c) Write a chemical equation for the above reaction.

18. The following table shows the position of six elements in the periodic table.

group →	1	2	3 to 12	13	14	15	16	17	18
Period 2	A					C		D	F
Period 3	E				B				

a) Which element is a nonmetal with valency 1?

b) Which element has the largest atomic radius?

c) Write the element that can make only co-valent bond?

d) Write the electronic configuration of 'C'

e) Write the element which is an inert gas.

f) Which among them is the strongest metal.

19.a) What is the natural phenomenon behind the formation of a rainbow?

b) Name a device that can be used to observe such a phenomenon in the laboratory?

c) If you are facing a rainbow in the sky, what is the position of sun with respect to your position?

20.A] Draw the electron dot structure of the following molecules.

a) oxygen molecule b) nitrogen molecule

B] Carbon compounds outnumber the compounds formed by other elements by a large margin. Suggest any two possible reasons for this versatile nature of carbon.

C] What is a covalent bond? Write any two properties of covalent compounds.

OR

A] Draw any two structural isomers of pentane.

B] Which of the following compounds undergo addition reaction?

C_2H_4 , C_2H_6 , C_3H_8 , CH_4 , C_2H_2

C] What happens when ethanol is oxidised with alkaline potassium permanganate? Write chemical equation for the reaction.

21.A] What are the different methods of contraception?

B] Why prenatal sex determination is prohibited by law?

C] Name two sexually transmitted diseases and write the methods to prevent them.

OR

A] Write the method of reproduction in the following organisms.

a) plasmodium b) hydra
c) rhizopus d) leishmania
e) bryophyllum f) mango tree

B] Write any two advantages of vegetative propagation in plants

22.A] Draw a ray diagram to show the image formation by a concave mirror when object is kept between the focal point and centre of curvature of the mirror. Write the position and nature of the image.

B] An object 2cm in length is placed at a distance of 10cm in front of a convex mirror of radius of curvature 30cm. Find the position and nature of the image.

OR

A] State the new Cartesian sign convention for reflection of light by spherical mirrors.

B] Draw a ray diagram showing the image formation by a convex lens when object is kept between F_1 and $2F_1$. State the position and nature of the image.

23. A] What is myopia?

B] How is it caused?

C] Draw ray diagram to show

a) the image formation by myopic eye

b) correction by a suitable lens

OR

A] Give reason for the following:

a) stars appear to be twinkling

b) sky appears to be blue from earth

c) red colour is selected for danger signal

B] Write the functions of the following.

a) retina b) iris c) eye lens d) ciliary muscles

24. A] Who are the stakeholders of forest?

B] Why should we conserve our forests and wild life?

C] What is *Chipko Andolan*?

OR

A] What are the major problems associated with the construction of large dams?

B] Write any two methods of water management which replenish ground water level.

C] Write any two advantages of storing water underground.

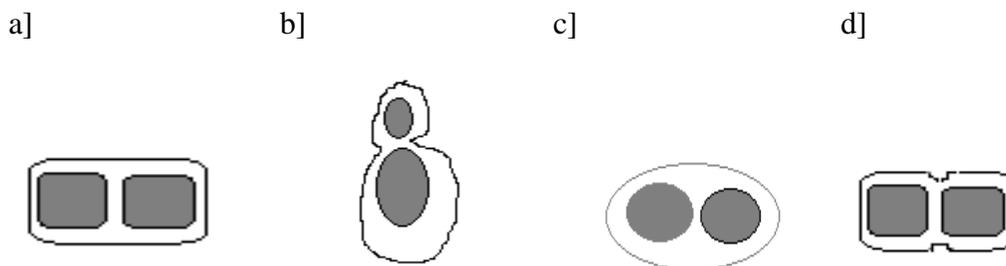
SECTION B

MCQ

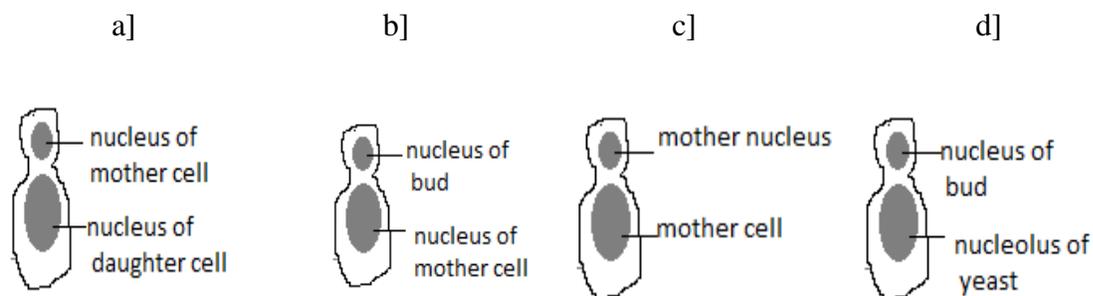
25. When sodium bicarbonate is added to acetic acid we observe

- a] a colour less gas is produced which burns with pop sound
- b] a colour less gas is produced which turns lime water milky
- c] brisk effervescence
- d] 'b' and 'c' are correct

26. The correct method of reproduction in yeast is shown in



27. The correctly labelled diagram is



28. If a red litmus paper is dipped in acetic acid,

- a] red litmus changes to blue
- b] red litmus remains red
- c] red litmus is decolourised
- d] red litmus changes to green

29. Oil when react with alkali , soap is formed. The process is called

- a] esterification
- b] saponification
- c] hydrogenation
- d] dehydration

30. Analogous organs have

- a] similar origin and same function
- b] similar origin and different function
- c] different origin and same function
- d] different origin and different function

31. When an object is placed in front of a convex lens, the image formed is real inverted and of the same size as that of the object. The position of the object is

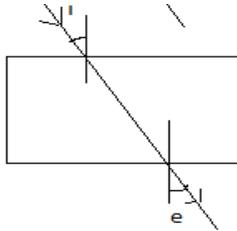
- a] at infinity
- b] beyond $2F_1$
- c] at $2F_1$
- d] at F_1

32. The number of cotyledons present in a dicot seed is

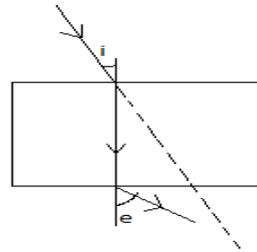
- a] one
- b] two
- c] three
- d] many

33. The correct diagram showing refraction through a glass slab is

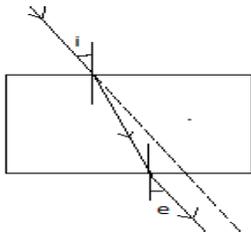
a]



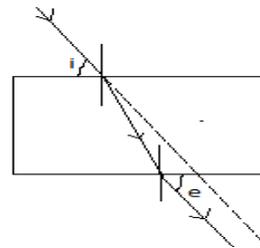
b]



d]



d]



34. A sample of water containing excess of magnesium ion is called

- a) soft water
- b) saline water
- c) hard water
- d) potable water

35. Which of the following are homologous?

- a) wings of a bird and wings of a butterfly
- b) potato and sweet potato
- c) wings of bird and forelimbs of horse
- d) tendrils of Pisum and tendrils of cucumber

36. Good lather is obtained when

- a) soap is mixed with distilled water
- b) soap is mixed with calcium chloride solution
- c) soap is mixed with magnesium chloride solution

d] both b and c

37. When refraction takes place through a glass slab

a] angle i = angle e

b] angle i < angle e

c] angle i > angle e

d] angle i = angle r

38. A student has to find the focal length of a concave mirror and convex lens by using a distant object. He will observe that the position of the screen is

a] on the same side as that of the object for both cases

b] on the other side of the lens / mirror for both cases

c] on the same side in the case of mirror and on the other side in the case of lens

d] on the other side in the case of mirror and on the same side in the case of lens

39. When a light ray is passed through a rectangular glass slab, the emergent ray

a] follows the same path of the incident ray

b] returns back

c] is displaced laterally and proceeds parallel to the direction of incident ray

d] intersects the incident ray

40. Amoeba reproduces by

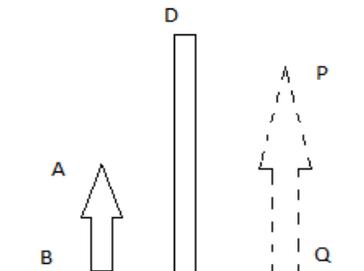
a] budding

b] regeneration

c] binary fission

d] fragmentation

41 If PQ is the image of AB, the device 'D' is



- a] concave mirror
- b] convex mirror
- c] concave lens
- d] convex lens

42. The correct diagram showing refraction through a prism is

a]

b]

c]

d]

