MP BOARD CLASS 10 EM SCIENCE MODEL PAPER SET 2 2020

म.प्र. बोर्ड कक्षा 10 EM विज्ञान मोडल पेपर सेट 2 2020

Time : 3 Hours) (Max. Marks : 80

Instructions :

(1) All questions are compulsory.

(2) There are four types of objective questions from Q. No. 1 to 4.

(3) Internal choices are given in question No. 5 to 22.

(4) Marks of each question are indicated against it.

(5) Draw neat and labelled diagram where necessary.

1. Choose and write the correct alternative : 5×1=5

(i) Which among the following is not an oxidizing agent ?

(a) Oxygen (b) Conc. sulphuric acid (C) Chlorine (d) Hydrogen.

(ii) Mendeleev's periodic table is based on :

(a) Atomic weight (b) Atomic number (c) Atomic radius (d) Atomic volume.

(iii) The autotrophic mode of nutrition requires : photos

(a) Carbon dioxide and water (b) Chlorophyll (c) Sunlight (d) All of these.

(iv) Growth inhibitor hormone in plants is : http://www.mpboardonline.com

(a) Auxin (b) Cytokininteresse (c) Abscisic acid (d) Gibberellic acid.

(v) An example of homologous organs is :

(a) Our arm and a dog's fore-leg (b) Our teeth and an elephant's tusks

(c) Potato and runners of grass (d) All of the above.

Ans. (i) (d), (ii) (a), (iii) (d), (iv) (c), (v) (d).

2. Fill in the blanks : 5×1 = 5

(i) ..... is an ore of mercury.

(ii) Convex and concave mirrors are collectively known as .....

(iii) For a young human adult with normal vision the far a point is at .....

(iv) The ..... make the energy from sunlight available to the rest of the ecosystem.

(v) ..... is better than recycling because the process of recycling uses some amount of energy.

Ans. (i) Cinnabar (HgS), (ii) spherical mirror, (iii) infinity, (iv) producers, (v) Reuse.

3. Match the columns : 5 x 1 = 5

Column 'A'	Column 'B'
(i) Vinegar	(a) Sunlight
(ii) Photosynthesis	(b) Fuse
(iii) Hypermetropia	(c) Acetic acid
(iv) Joule's heating	(d) Photosynthesis
(v) Green plants	(e) Far sightedness

Ans. (i) → (c), (ii) → (a), (iii) → (e), (iv) → (b), (v) → (d).

4. Answer in one word/sentence : 5 x 1 = 5

(i) Which acid is present in Nettle leaves ?

(ii) What is the pressure of blood in artery during ventricular contraction called ?

(iii) Which part of the brain controls posture and balance of the body ?

(iv) What is the information source in a cell ?

(v) What is the commercial unit of electrical energy ?

Ans. (i) Methanoic acid, (ii) Systolic pressure, (iii) cerebellum, (iv) cellular DNA, (v) Kilowatt hour.

5. Why is respiration considered an exothermic reaction ? Explain. 2

Or

A shiny brown coloured element 'X' on heating in air becomes black in colour, Name the element 'X' and the black coloured compound formed.

6. Why do you think the noble gases are placed in a separate group ? 2

Or

Name two elements you would expert to show chemical reactions similar to magnesium. What is the basis of your choice ?

7. Name the various types of asexual reproduction. 2

Or

What happens if fallopian tube is blocked ?

8. Define variation. 2

Or

What factors could lead to the rise of a new species ?

9. Define 1 dioptre of power of a lens. 2

Or

Find the focal length of a lens of power - 2.0 D. What type of lens is it?

10. What is the difference between displacement and double displacement reactions? Write equations for these reactions. 3

Or

A solution of substance 'X' is used for white-washing.

(i) Name the substance 'X' and write its formula.

(ii) Write the reaction of the substance 'X' named in (i) above with water.

11. Why does the sun appears reddish early in the morning ? 3

Or

(a) What is meant by power of accommodation of the eye ?

(b) Why does the sky appear dark instead of blue to an astronaut ?

12. (a) What is the role of the split sing in an electric motor ? 3

(b) When is the force experienced by a current-carrying conductor placed in a magnetic field largest?

Or

Name two safety measures commonly used in electric circuits and appliances.

13. When does an electric short circuit occur ?

Or Two circular coils A and B are placed close to each other. If the current in the coil A is changed, will some current be induced in the coil B ? Give reasons.

14. What are the disadvantages of fossil fuels ? 3

Or

Compare and contrast bio-mass and hydro-electricity as sources of energy.

15. Plaster of paris should be stored in a moisture-proof container. Explain, why ? 4

Or

Tooth enamel is one of the hardest substances in our body. How does it undergo damage due to eating of chocolates and sweets ? What should we do to prevent it?

16. Explain the nature of the covalent bond using the bond formation in CH_3Cl. 4

Or

How would you distinguish experimentally between an alcohol and a carboxylic acid ?

17. What are the differences between transport of materials in xylem and phloem ? 4

Or

How are the lungs designed in human beings to maximize the area for exchange of gases ? each

18. How are involuntary actions and reflex actions different from other ? 4

Or

Compare and contrast nervous and hormonal mechanisms for control and coordination in animals.

19. Let the resistance of an electrical component remain constant while the potential difference across the two ends of the component decreases to half of its former value. What change will occur in the current through it ? 4

Or

Which uses more energy, a 250 W TV Set in 1 hr or a 1200 W toaster in 10 min ?

20. (a) Explain the meanings of malleable and ductile. 5

(b) Why is sodium kept immersed in kerosene oil ?

Or

You must have seen tarnished copper vessels being cleaned with lemon or tamarind juice. Explain why these sour substances are effective in cleaning the vessels. http://www.mpboardonline.com

21. Why is variation beneficial to species but not necessarily for the individual ? 5

Or

How is the process of pollination different from fertilization?

22. Name the type of mirror used in the following situations : 5

(a) headlights of a car, (b) side/rear view mirror of a vehicle, (c) solar furnace.

Support your answer with reason.

Or

One half of a convex lens of focal length 10 cm is covered with a black paper. Can such a lens produce an image of a complete object placed at a distance of 30 cm from the lens? Draw a ray diagram to justify your answer.