MID-TERM EXAMINATION, 2017-18

CLASS X

SCIENCE

Time : 3 hours **MM - 80**

General Instructions:-

1. This question paper consists of two sections- Section 'A' and Section 'B'
2. Section 'A' : Q 1 - Q2 are of 1 mark each, Q3 - Q5 are of 2 marks each, Q6 - Q15 are of 3 marks each and Q16 - Q21 are of 5 mark each.
3. Section 'B' consists of practical based Questions from Q22 to Q27 of 2 marks each.

SECTION -'A'

Q.1. Name the reserved food of plant cell & animal cell. (1)

Q.2. Why are platinum, gold and silver used to make jewellery? (1)

Q.3. Plants have low energy needs as compared to animals. Explain (2)

Q.4. Give an example each for thermal decomposition and photochemical decomposition reactions. Write relevant balanced chemical equations also. (2)

Q.5. Name the following:- (2)

(a) A metal which can be easily cut with a knife.
(b) A non metal which is the hardest substance known.
(c) A metal which is used to galvanize iron articles.
(d) A non metal which exists as a liquid at room temperature.

Q.6. (a) What is the direction of magnetic field lines inside and outside a solenoid? (3)
(b) How can a solenoid be changed into a electromagnet?
(c) A current carrying straight conductor is placed in uniform magnetic field in such a way that the direction of current is parallel to the direction of magnetic filed. Will the conductor experience a force?

Q.7. (a) What happens to the force acting on a current carrying conductor placed in magnetic field when:- (3)
(i) When the direction of magnetic field is reversed without changing the direction of current.
(ii) When direction of both current and magnetic field is reversed.
(b) State the law used to find the direction of force.

Q.8. (a) A wire of resistance 20 Ω is stretched to double its length. (3)

If the thickness of the wire has reduced to half, what will be its new
(i) resistivity (ii) resistance ?

(b) Shyam picked four resistors of resistances 4 Ω, 8 Ω, 12 Ω and 24 Ω from his physics lab. His friend Uday challenged him to connect them to get a resistance less than 4 Ω from the arrangement. Will Shyam be able to accept the challenge and what would be the value of effective resistance from the arrangement?

Q.9. (a) A bulb is rated at 220 V-100W. What is its resistance? Two such bulbs burn in parallel for 5 hrs. What is the power consumed by the combination if the voltage of the source is 220V? Also calculate how many units of electrical energy is consumed? (3)

(b) State SI unit of electric power.

Q.10. Defie reflex action? Trance the sequence of events through a reflex arc which occur when a bright light is focused on your eyes. (3)

OR

(a) Brain & spinal cord are known to be very essential & delicate parts. Explain how are they protected in our body?

(b) Why is the flow of signals in a synapse from axon end of one neuron to dendrite end of another neuron but not the reverse?

Q.11. (a) Explain how offsprings & parents of organisms reproducing sexually have the same number of chromosomes? (3)

(b) Give the important feature of the organism which reproduce by fragmentation. Can multicellular organisms having complex organization of body reproduce by this method ? Give reason.

Q.12. (a) What are sexually transmitted diseases? Name two such diseases due to bacterial infection. (3)

(b) Name any two areas related to reproductive health which have improved over than past 50 years in our country.

Q.13. A reddish brown coloured metal used in electrical wires when powdered and heated strongly in an open china dish, its colour turns black. When hydrogen gas is passed over this black substance it regains its original colour. Based on the above information answer the following:- (3)

(a) Name the metal and the black coloured substance formed.

(b) Write balanced chemical equations for both the reactions.

Q.14. Rohit takes cold drinks every day. Cold drinks contain sugar and carbon dioxide which is dissolved in water along with preservatives like sodium benzoate. They can cause tooth decay. They may also cause hyperacidity and weaken our bones. On the other hand, his friend Mohit takes lemonade and fruit juices instead of cold drinks. (3)

(a) What is the formula of the acid present in cold drinks?

(b) How do cold drinks cause tooth decay?

(c) What values are possessed by Mohit taking lemonade and fruit juices instead of cold drinks?

Q.15. Give reasons why carbon neither forms C^{4+} cations nor C^{4-} anions, but forms covalent compounds which are bad conductors of electricity. (3)

OR

Draw electron dot structures of the following:-

(a) N_2 (b) C_2H_6 (c) CO_2

Q.16. (a) Identify the compound 'X' (name and chemical formula) on the basis of the reactions given below:- (5)

$$X + Zn \xrightarrow{Heat} A + H_2$$

$$X + HCl \longrightarrow B + H_2O$$

Also write the name and chemical formula of A and B.

(b) Explain why Plaster of Paris should be stored in a moisture-proof container. Support your answer with a balanced chemical equation.

Q.17. (a) Ionic compounds have high melting and boiling points. Why? (5)

(b) How is sodium obtained from molten sodium chloride? Give the equations involved.

(c) Draw a neat labeled diagram to show electrolytic refining of copper.

Q.18. (a) What is an A. C. generator? On what principle does it work? (5)

(b) Draw a labeled diagram to explain the construction of an A.C. generator.

(c) Why A.C. is preferred over D.C for long range transmission of electric power?

Q.19. (a) What is the angle of incidence when a ray of light in incident perpendicularly on the mirror? (5)

(b) A concave mirror forms an erect image of an object placed at a distance of 10cm from it. The size of the image is double that of the object, where is the image formed?

(c) Draw a ray diagram to show the image formation by a concave mirror when the magnitude of linear magnification is one.

Q.20. Draw a diagram of alimentary canal of man. Name & label the following (5)

(a) The organ which pushes the food from pharynx to stomach by peristaltic movements.

(b) Longest region of the alimentary canal.

(c) Part that secrets fat digesting enzyme.

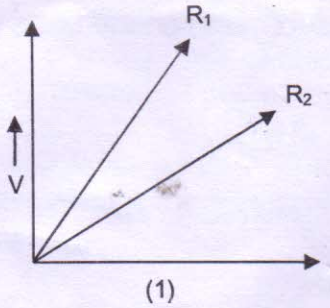
(d) Organ where bile juice is stored.

Q.21. (a) What are hormones? Name the two hormones secreted by pancreas. (5)

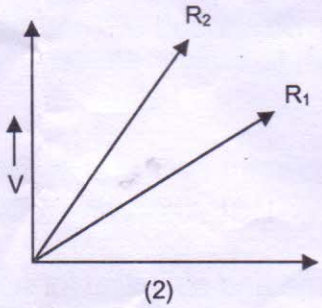
(b) Explain feedback mechanism with the help of an example.

Section 'B'- Practical Based Questions

Q.22. A student carries out an experiment to find the equivalent resistance of series and parallel combination of two resistances each of value R. If R_1 is the effective resistance of series combination and R_2 is the effective resistance of parallel combination respectively then which of the following graph is correct. Here current is taken on the X-axis of the graph. (2)

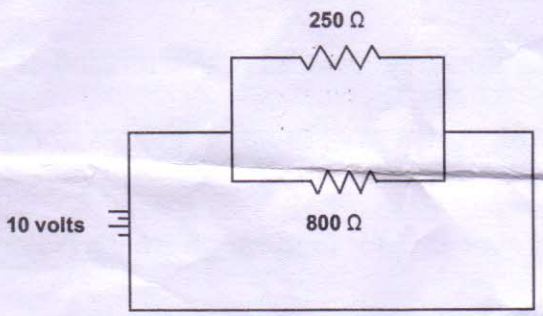


(1)



(2)

Q.23. Redraw the circuit after inserting a voltmeter and an ammeter to measure the current and potential drop across 250 Ω resister. Also find the value current measured by the ammeter. (2)



Q.24. Explain why only turgid leaf is selected for the preparation of temporary mount of a leaf peel? (2)

Q.25. A student is observing a permanent slide showing asexual reproduction in yeast. Name this process and draw the diagrams, of what he observes, in a proper sequence. (2)

Q.26. Why does a moist blue litmus paper turn red when it is brought near the mouth of the test tube in which ferrous sulphate crystals are being heated? (2)

Q.27. A student added dilute HCℓ to the test tube containing zinc granules. Write the two main observations after the reaction takes place. What will be the colour of zinc after the reaction? (2)