

G.D. GOENKA PUBLIC SCHOOL
SUMMATIVE ASSESSMENT-I (2014-15)
SCIENCE
CLASS-X

Time : 3 Hrs.

M.M. 90

General Instructions :

1. The question paper comprises of three section A, B and C. You are to attempt all the sections.
2. Each section is further divided into two parts (I) and (II). Part (II) in each section has questions based on practical skills.
3. All questions are compulsory. There is no choice in any of questions.

Section-A (Physics)

Part-I

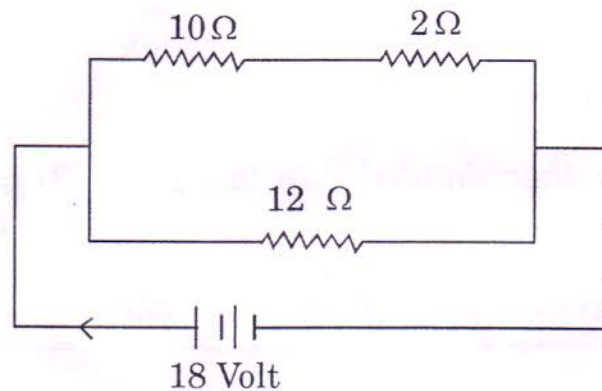
1. Which rule can be applied to find the direction of force experienced by an electron moving in a magnetic field perpendicular to it? (1)
2. State Fleming's Right hand rule. Name the device that works on the principle of electromagnetic induction. (2)
3. Explain briefly any 2 ways where renewable resources of nature can be used to harness energy. (3)
4. How would you connect three resistors 2Ω , 3Ω and 6Ω so as to obtain a total of :

(i) 7.2Ω

(ii) 1Ω

Handwritten calculations for question 4:
 (i) $\frac{1}{\frac{1}{2} + \frac{1}{3} + \frac{1}{6}} = \frac{1}{\frac{2+2+1}{6}} = \frac{6}{5} = 1.2\Omega$
 (ii) $\frac{1}{\frac{1}{2} + \frac{1}{3}} = \frac{1}{\frac{3+2}{6}} = \frac{6}{5} = 1.2\Omega$
 (iii) $\frac{1}{\frac{1}{2} + \frac{1}{6}} = \frac{1}{\frac{3+1}{6}} = \frac{6}{4} = 1.5\Omega$
 (iv) $\frac{1}{\frac{1}{3} + \frac{1}{6}} = \frac{1}{\frac{2+1}{6}} = \frac{6}{3} = 2\Omega$
 (v) $\frac{1}{\frac{1}{2} + \frac{1}{6} + \frac{1}{3}} = \frac{1}{\frac{3+1+2}{6}} = \frac{6}{6} = 1\Omega$

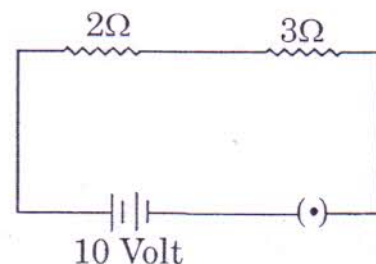
5. What are the constituents of 'Biogas' ? How is it produced ? Give one reason why it can be classified as a good fuel ? (3)
6. Define "Resistivity" and calculate its value for the material of a wire 1 m long, 0.5 mm in diameter and Resistance = 10Ω (3)
7. (a) Draw the magnetic field pattern of a solenoid. (1)
 (b) Give 2 points of resemblance of the same to that of a bar magnet. (2)
 (c) Give 2 ways in which you can increase the strength of the solenoid. (2)
8. (i) For the given circuit find :



- (a) Equivalent resistance (1½)
 (b) Current drawn by the circuit (1½)
- (ii) Give reasons why :
- (I) Toaster's heating element is made of an alloy?
 (II) Domestic circuits are preferably arranged in parallel? (2)

Part-II

1. The current through the given circuit is : (1)
- (a) 5 Amp
 (b) 2 Ampere
 (c) 10 Ampere
 (d) 1 Ampere



Section-B (Chemistry)

Part-I

1. Draw the electron dot diagram of Sodium Chloride. (1)
2. Write balanced chemical equation for the following chemical reaction :
Barium chloride + Aluminium sulphate \rightarrow Barium sulphate + Aluminium chloride (2)
3. (a) Name the product formed when copper metal is heated in air.
(b) What is the colour of the product formed in (a) above.
(c) What is the visible change taking place when hydrogen gas is passed over the product obtained by heating copper metal in air. (3)
4. A student was about to add water to a concentrated acid while conducting an experiment for the purpose of diluting an acid, when he was told by the lab assistant not to do so. He also told him that the correct method of diluting the acid is by adding acid slowly to the water.
(a) Why was the student told ^{not to} dilute the acid by adding water to the acid ?
(b) What value did the lab assistant display ?
(c) How is the concentration of hydronium ions affected when a solution of a strong acid is diluted ? (3)
5. (a) Name the gas evolved when a metal reacts with water.
(b) What would you observe when zinc is added to a solution of iron (II) sulphate ? Write an equation for the chemical reaction taking place. (3)
6. (a) Explain why ionic compounds allow electric current to pass through them in the molten state but not in the solid state.
(b) Mention any two methods of prevention of corrosion. (3)

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7. (a) Write the equation for thermit reaction.
(b) Write any two differences between calcination and roasting.
(c) Explain the process of electrolytic refining of copper. (5)
8. (a) Name the products obtained at (i) the anode and (ii) the cathode during ^{chloralkali} chloralkali process.
(b) Write any two uses of sodium hydroxide.
(c) Name any two naturally occurring acids.
(d) Write any two uses of sodium hydrogen carbonate.
(e) Write the equation for the formation of gypsum from Plaster of Paris. (5)

Part-II

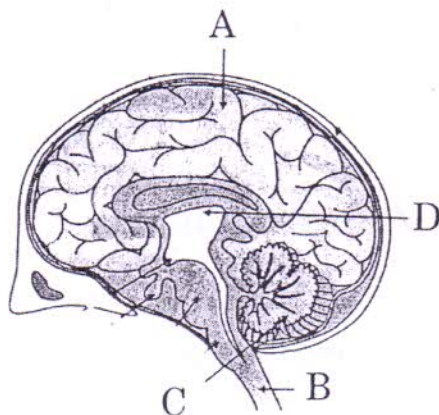
9. On a standard pH chart, the colours corresponding to pH 1 and 14 respectively are :
- (a) yellow, green (b) violet, orange
(c) red, blue (d) blue, mustard (1)
10. What will be the colour change when a few drops of phenolphthalein are added to NaOH solution ? (1)
- (a) Colourless to pink (b) White to yellow
(c) Blue to red (d) Red to blue
11. The products of decomposition reaction of ferrous sulphate are : ^{FeSO₄ Fe₂O₃}
- (a) SO₂, SO₃, FeO (b) SO₃, Fe₂O₃
(c) SO₃, SO₂, Fe₂O₃ (d) SO₂, FeO (1)
12. Write the change(s) taking place when water is added to quick lime. Also write the equation for the reaction. (2)

Section-C (Biology)

Part-I

1. Hormones need to be released in a limited amount. What is the mechanism by which amount of hormone in the blood is regulated? (1)

2. State the function of gustatory receptors. Where are they usually located ? (2)
3. Deforestation is taking place across the globe and this leads to drought and famine.
- (a) How do plants facilitate rainfall ? (1)
- (b) As a student what can you do to stop deforestation ? (1)
- (c) Mention two points as to why a forest cover is essential besides facilitating rainfall ? (1)
4. What is the function of liver and pancreas in the digestive process. (3)
5. Name the hormone released by thyroid gland. Also state the functions of this hormone. Which disease develops due to deficiency of iodine in our diet ? (3)
6. Differentiate between aerobic and anaerobic respiration. (3)
7. A. Draw a longitudinal section of human heart. Name and label the :- (2)
- (i) Artery which carries deoxygenated blood from the heart. (1)
- (ii) Chamber which receives oxygenated blood from the lungs (1)
- B. What are capillaries ? State the function performed by them. (1)



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- (a) Label the part A, B, C and D. (2)
- (b) Which part of the brain maintains posture and equilibrium of the body ? (2)
- (c) In which part is the sensory information interpreted in the brain and name one gland present in the diagram. (1)

Part-II

9. While preparing temporary mount of leaf peel to observe stomata. Glycerine is added to :
- (a) allow entry of air bubbles
(b) give colour to the tissues
(c) make the mount more attractive
(d) keep the tissue wet (1)
10. The set up to show " CO_2 is released during respiration." Gives desired result with :
- (a) dry gram seeds (b) dry bean seeds
(c) germinating gram seeds (d) boiled bean seeds (1)
11. After removing chlorophyll, when iodine test is performed on the destarched experimental leaf which was partly covered with black paper and kept in sunlight for six hours, the expected observation would be :
- (a) entire leaf turns blue black
(b) the covered part of the leaf only turns blue black
(c) The part not covered turn blue black
(d) No change in colours is observed as chlorophyll is removed. (1)
12. A student is preparing a temporary mount of a leaf Peel for observing stomata. He should use 'X' for staining and 'Y' for mounting the slide. Identify X and Y. (2)