DPS (RKP)

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Isha.

RB0DESZ

SUMMATIVE ASSESSMENT – I, 2014

SCIENCE

Class – X

Time Allowed : 3 hours Maximum Marks : 90

General Instructions :

1. The question paper comprises of **two Sections, A** and **B**. You are to attempt both the sections.
2. **All** questions are **compulsory**
3. **All** questions of **Section-A** and **all** questions of **Section-B** are to be attempted separately.
4. Question numbers **1** to **3** in **Section-A** are **one mark** questions. These are to be answered in **one word or in one sentence**
5. Question numbers **4** to **6** in **Sections-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **7** to **18** in **Section-A** are **three marks** questions. These are to be answered **in about 50 words** each
7. Question numbers **19** to **24** in **Section-A** are **five marks** questions. These are to be answered **in about 70 words** each.
8. Question numbers **25** to **33** in **Section-B** are multiple choice questions based on practical skills. **Each question is a one mark question.** You are to select one most appropriate response **out of the four provided to you.**
9. Question numbers **34** to **36** in **Section-B** are questions based on practical skills are two marks questions.

SECTION-A

1 Why is it advised to use iodised salt in our diet ? 1

2 Define the potential difference between two points. 1

3 Mention any one reason due to which most of the thermal power plants are 1

set up near coal or oil fields.

4 Mention the names of the metals for the following : 2

(i) Two metals which are alloyed with iron to get stainless steel.

(ii) Two metals which are used for making jewellery.

5 What is universal indicator ? State the purpose for which this indicator is used. 2

6 (i) Why cramps are caused in our muscles during sudden activity ? 2

(ii) Name the type of respiration that takes place in yeast during fermentation

7 A student dropped a few pieces of marble in dilute hydrochloric acid contained in a test tube. The evolved gas was then passed through lime water. What change would be observed in lime water ? Write balanced chemical equations for both the changes observed. 3

8 Balance the following chemical equations : 3

(i) $NH_3 + CuO \rightarrow Cu + N_2 + H_2O$

(ii) $2Al + Fe_2O_3 \rightarrow Al_2O_3 + Fe$

(iii) $P_4 + Cl_2 \rightarrow PCl_5$

9 Give suitable reasons for the following statements : 3

(i) Shining surface of metals is tarnished after some time.

(ii) Sodium and potassium are kept under kerosene oil.

(iii) Generally no hydrogen gas is evolved when metals react with dilute nitric acid.

10 With the help of balanced chemical equations explain why : 3

(i) respiration is considered as an exothermic reaction.

(ii) photosynthesis is considered an endothermic reaction.

11 Draw a neat diagram of excretory system of human beings and label on it : 3

(i) Left kidney (ii) Urinary bladder

12 (a) Name the organs where receptors are usually located? 3

(b) State the functions of :

(i) gustatory receptors

(ii) olfactory receptors

(c) Identify the parts of a neuron

(i) Where information is acquired

(ii) Through which information travels

13 Explain how does auxins promote the growth of a tendril around a support? 3

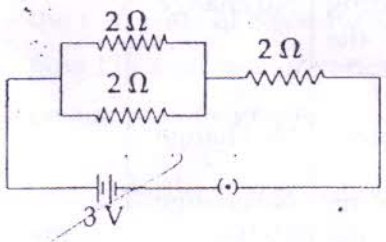
14 State the purpose for which the following rules are used : 3

(i) Right hand thumb rule

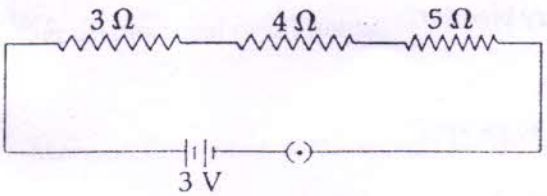
(ii) Fleming's left hand rule

(iii) Fleming's right hand rule

15 Three resistors of 2 Ω each are connected to a battery of 3 V as shown. Calculate the current drawn from the battery and voltage across the 2 Ω resistor. 3



16 Study the following circuit and find the potential difference across 4 Ω resistor 3



17 Arun lives in an eco-friendly house. All rooms in his house are cross ventilated and well lit with sun's light. He has installed solar panels on roof top and also uses solar devices like solar cooker, solar water heater etc. Although he has spent some more money initially on these installations, yet he is happy now. 3

(i) State the reason behind Arun's happiness.

(ii) Which element is used in fabricating solar cells ?

(iii) What inspirations should we take from Arun ?

18 Write any three characteristics of a good fuel. 3

19 Five metals A, B, C, D and E were added to different solutions separately. The results observed are shown in following table : 5

Metals	Solutions				
	$FeSO_4$	$CuSO_4$	$ZnSO_4$	$AgNO_3$	$Al_2(SO_4)_3$
A	No change	No change	No change	A coating on the metal	No change
B	A grey deposit on the metal	A brown coating on the metal	No change	A coating on the metal	No change
C	No change	No change	No change	No change	No change
D	No change		No change	A coating on the metal	No change
E		Brown coating	A coating on the metal	A coating on the metal	No change

Based on the observations recorded in the table answer the following :

(i) Write the most reactive metal.

(ii) Write the least reactive metal.

(iii) What would be observed if metal D is added to a solution of copper sulphate ?

(iv) What would be observed if metal E is added to a solution of iron (II) sulphate ?

(v) Arrange the metals A, B, C, D and E in order of decreasing reactivity.

20 Name the material used for the preparation of plaster of Paris. Write chemical equation for the reaction involved. What will happen if heating is not controlled while preparing plaster of Paris. Which property of plaster of Paris is utilised in making casts for broken limbs in hospital. Write an equation to show the reaction between plaster of Paris and water. 5

21 Define heterotrophic mode of nutrition. Explain three different ways by which heterotrophs obtain food. Write two points of difference between autotrophs and heterotrophs. 5

22 Draw the pattern of magnetic field lines through and around a current carrying solenoid. What does the magnetic field pattern inside the solenoid indicate ? Explain how we can utilize this field to make an electromagnet. List two ways to increase the strength of an electromagnet. 5

23 State the factors on which the resistance of a metallic wire depends. Define the term resistivity and derive its SI unit. 5

A wire of length 1 metre and radius 0.02 cm has a resistance of 5.0 ohms. Calculate the resistivity of the material of the wire.

24 Draw a labelled circuit diagram to study a relationship between potential difference (V) across the two ends of a conductor and the current (I) flowing through it. State the formula to show how I in a conductor varies when V across it is increased stepwise. Show this relationship also on a schematic graph. 5

Calculate the resistance of a conductor if the current flowing through it is 0.25 A when the applied potential difference is 1.0 V.

SECTION - B

25 If NaOH is added to distilled water the, pH of new solution will be : 1

a >7 b <7 c 7 d 0

26 Concentration of H^+ of will be lowest for the solution which has a pH value : 1

(a) 14 (b) 6 (c) 5 (d) 3

27 Quick lime is a : 1

(a) white powder (b) brown powder

(c) blue powder (d) yellow powder

28 Parinita took three metals labelled P, Q and R. she carried out displacement reactions with their salt solutions and found that P is less reactive than R but more reactive than Q. The metals P, Q and R respectively could be : 1

(a) Zinc, Copper, Aluminium (b) Copper, Zinc, Aluminium

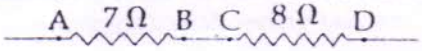
(c) Aluminium, copper, zinc (d) Copper, Aluminium, Zinc

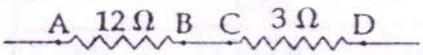
29 Rohit observed the formation of a coating when he added the solution of copper sulphate to the iron nails. This deposition is of : 1

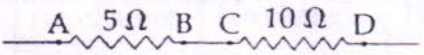
(a) Iron (b) Copper

(c) Iron sulphide (d) Sulphur

30 In the series combination of resistors shown below the maximum equivalent resistance will be in the combination : 1

(A) 

(B) 

(C) 

(a) A (b) B

(c) C (d) same in all the combinations

31 A student measured equivalent resistance of two resistances of a 45Ω and 36Ω resistor joined in parallel ? Correct value obtained by him would be 1

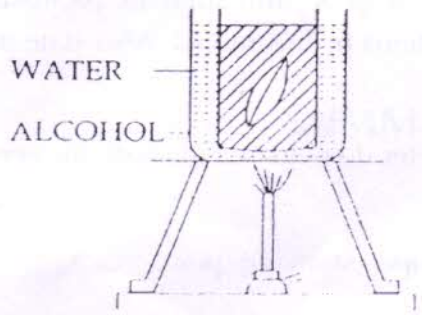
(a) 9Ω

(b) 20Ω

(c) 40.5Ω

(d) 80Ω

32 During an experiment on photosynthesis, in the step shown in figure below, the alcohol turns green because : 1



(a) of heating

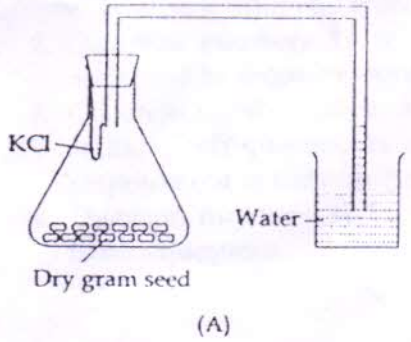
(b) chlorophyll being organic in nature, dissolves in it

(c) of the impurities of the surroundings

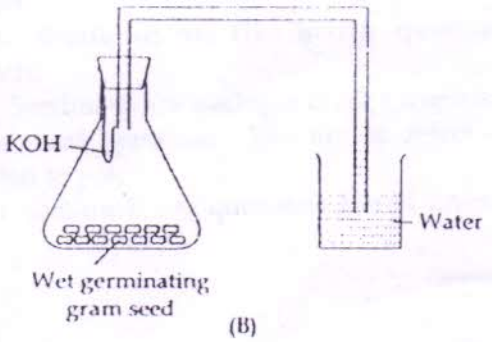
(d) cells of leaf disintegrate in it

33 (a) A (b) B (c) C (d) D 1

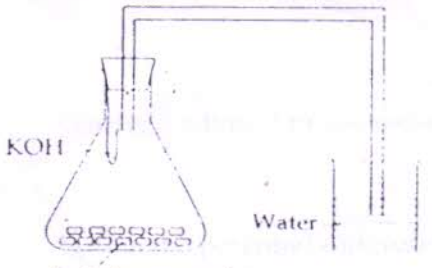
. Identify the diagram which is correctly labelled from the following :



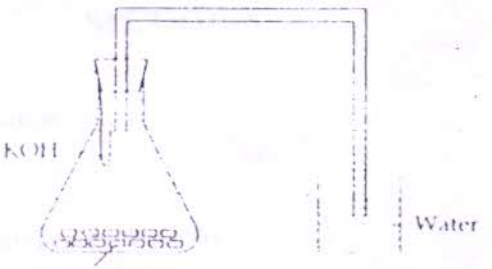
(A)



(B)



(C)



(D)

(a) A (b) B (c) C (d) D

34 During an experiment a student obtains white precipitate of barium sulphate on mixing two aqueous solutions with each other. Name the two solutions he has mixed. Also state the type of reaction that has taken place. 2

35 What is done when the pointers of ammeter and voltmeter do not coincide with the zero mark on their scales even when the circuit is open ? 2

36 Draw a labelled diagram of a stomatal apparatus with open stomatal pore. 2