

Principles of valuation (Key sheet)

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VIII class - SA-1 physical Science (EM)

2016-17

PART - A SECTION - I

1. Force can change
 - (i) the state of motion of an object
 - (ii) the direction of motion of the object
 - (iii) the speed of the moving object
 - (iv) the shape of the object - Any 2 points → 1M.
2. If the front portion of an aeroplane is flattened, its speed will be decreases due to more fluid friction acting on it. → 1M
3. The precaution to be taken is 'do not inhale the fumes evolved, when the sulphur is heated, because they are harmful'. → 1M
4. I would suggest Ramya to buy sweaters and shawls made up of acrylic which is cheaper than wool and give warmth to our body. → 1M

SECTION - II

5. (i) The effect of ~~force~~^{pressure} depends on the area of contact on which the force is acting.
 - As the area of contact increases, the effect of ~~force~~^{pressure} exerted by the loads become less → 1M
- (ii) For decreasing the effect of ~~force~~^{pressure} exerted by the loads on the road, the lorries have a large number of broader tyres → 1M

2M

6.

Can be recycled	can't be recycled
Tooth brushes plastic bottles	polythene bags Cooker handles

4 × 1/2 = 2M

7. The following questions are asked
 - (i) What ^{are the} properties shown by the metals?
 - (ii) which sample (material) does not shows the properties of 'malleability, ductility, conductivity of heat and electricity'? 2 questions → 2M

8.

Situation	Material used (or) procedure followed to increase / reduce friction.	
1. Between rotating shafts of machine tools	Ball bearings are used to reduce friction.	
2. Bottom of the sports shoe	Spikes are used to increase friction	✓ $\frac{1}{2}$ M
3. On the road	To make the surface of the road will be rough. It increases the friction	$\frac{1}{2}$ M
4. On the hinges of a door	oil is used to reduce friction	$\frac{1}{2}$ M
5. To play carrom board	powder is used to reduce friction.	$\frac{1}{2}$ M
		<u><u>2M</u></u>

9. i) I appreciate the introduction of synthetic fibres because they possess unique characteristics which make them popular dress materials
- ii) They absorb less water and dry at a faster rate. some are even water proof.
- iii) They are durable, less expensive, ~~reads~~ readily available, affordable and easy to maintain.
- iv) So synthetic fibres are decreasing the boundaries and make the people unity irrespective of culture and costumes.

4 points \rightarrow 2M

Section - III

10. Contact force :- The force which results when there is a direct physical contact between two interacting objects is known as 'contact force' \rightarrow 1 Mark.

Ex:- When we press a tooth paste tube, the paste inside the tube will come out.

In this, there is direct physical contact between our hand and the tube. Here the force acting by the hand on the tooth paste tube is a contact force. \rightarrow 1 Mark.

Field force :- The force which occurs without any physical contact between two objects is known as 'field force'. \rightarrow 1 Mark

Ex:- If we place a bar magnet near to a magnetic compass, the needle of the compass moves (rotates) and changes its direction without any physical contact with the magnet. But a force must be acting on the needle. This force is a field force. \rightarrow 1 Mark

(Note:- Marks are given any other relevant examples)

Total = 4M

10. I agree with Harresh.

Friction as a good friend:-

- i) Friction allows us to walk or run without slipping
- ii) It helps us to hold things with our hands
- iii) It allows vehicles to travel on the road safely.
- iv) No building can be constructed if there is no friction $\rightarrow 2M$.

Friction as an evil:-

- i) Friction causes wearing and tearing the surfaces which are in contact.
- ii) It causes worn out the tyres, which are dangerous because they can slide and skid easily.
- iii) It produces heat in machine which can damage some parts of the machine.
- iv) It causes wasting of energy and fuels $\rightarrow 2M$

$$\text{Total} = \frac{2M}{4M}$$

11. Aim: Identifying thermoplastic and thermosetting plastics by flame test. $\rightarrow \frac{1}{2}M$.

Materials required:- pair of Tongs, spirit lamp, samples of plastics $\rightarrow \frac{1}{2}M$.

Procedure:-

- * Take a spirit lamp and light it-
- * Clamp one piece of plastic sample say piece of tooth brush with tongs.
- * place the sample on spirit lamp flame.
- * observe the changes during the burning of sample.
- * Note the observations like, whether sample is being softened or burnt with smell and become hard etc.
- * Repeat the procedure with other samples
- * Record the observations sample wise in the following table. $\rightarrow \frac{1}{2}M$.

S.No	Name of the plastic sample	Softened/burnt with burning smell and become hard	Thermoplastic / Thermosetting plastic.
1.	Tooth brush handle	Softened	Thermoplastic
2.	Comb	softened	Thermoplastic
3	piece of bucket	softened	Thermoplastic
4.	Handle of utensil	burnt with burning smell and become hard	Thermosetting plastic
5	Electronic switch	"	"
6	Meals plate	"	"

$$\text{Total} = \frac{1M}{4M}$$

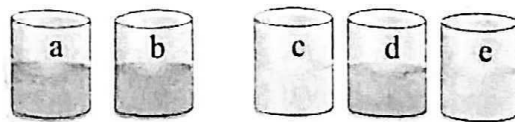
(OR)

4

11 Procedure :- Take five beakers and label them a, b, c, d and e.

* Take 50 ml of water in each beaker and dissolve a spatulaful of copper sulphate in beakers 'a' and 'b'.

* Dissolve a spatulaful of zinc sulphate, iron sulphate and zinc sulphate in beakers c, d and e.



* Now put Zinc granules in beaker 'a', Iron nail in beaker 'b', copper turnings in beaker 'c' and 'd', Iron nails in beaker 'e'.

* Leave the beakers undisturbed.

* Record the changes in the colour of the solutions. \longrightarrow 1M

Observations :-

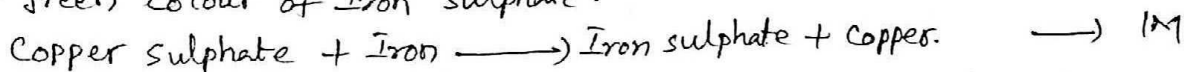
* The blue colour of copper sulphate disappears and a powdery red mass of copper is deposited at the bottom of the beaker 'a'.

* ~~It that~~ means that Zinc displaces copper from copper sulphate giving rise to colourless zinc sulphate.



* In beaker 'b' red copper is found at the bottom of the beaker and on the nail leaving light green iron sulphate solution.

It means that Iron displaces copper from copper sulphate leaving light green colour of Iron sulphate.



* From this we can say that a more reactive metal can replace a less reactive metal.

* We do not see any change in the other three beakers (c, d and e)

* In beaker 'c', copper is unable to displace zinc from zinc sulphate.

* In beaker 'd' copper is unable to displace iron from iron sulphate.

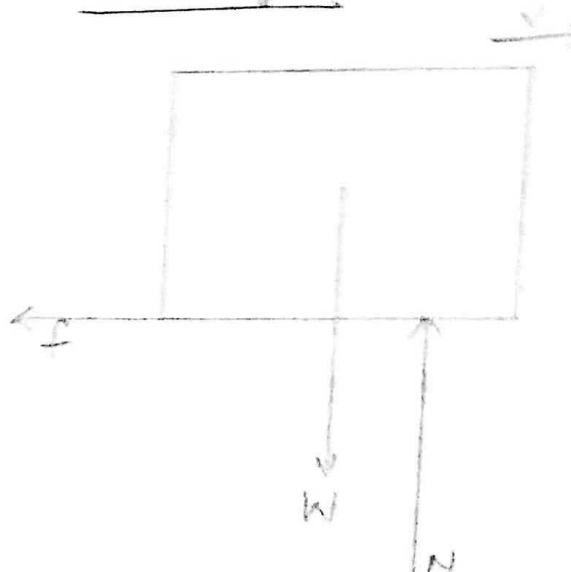
* In beaker 'e', Iron is unable to displace zinc from zinc sulphate.

* From this we can say that a less reactive metal cannot replace a more reactive metal. \longrightarrow 1M

Total = 4 marks

Material	Properties of solids in various cases	Notes
1. Copper	It is used as wire of conductors	The value of conductivity is
2. Iron	conductors	The value of conductivity is
3. Plastic	Insulator + Dielectric	The value of conductivity is
4. Rubber	Insulator	The value of conductivity is

(12) Free body diagram



- W = Gravitational force
- N = Normal force
- v = direction of the moving body
- f = frictional force

→ 50 N force

(iii) The net force acting on the block in the vertical direction is zero
 Total = 1.1/1000

