WARANGAL DISTRICT COMMON EXAMINATION BOARD
QUARTERLY EXAMINATIONS-OCTOBER-2015
GENERAL SCIENCE , Paper – I

(Physical Sciences)

(English Version)

Time: 2 Hours 45 Min.   **Parts A and B**   **Maximum Marks : 50**

Class-10 - KEY SHEET
Section - I

1. Focal length of a mirror does not depends upon surrounding medium.

   If a concave mirror immersed in water, its focal length does not changed.

2. The speed of light is maximum in medium – C.

   Because, it has less refractive index value.

3. For the man on the bank, the man in water appears shorter (Closer).

4. The body sweating is due to evaporation. As it is a cooling process, the body cools.

   If the air from fan touches us, it receives heat from our body, so we feel cool.

5. Antacid tablet to be given to apoorva.

   It contains weak base.

6. The physics principle involved is Total internal reflection.

   Mirages (or …..) are the examples for total internal reflection.

7.

Acids	Neutrals	Bases
Coffee	Tap water	Saliva
Tomato juice		

Section - II

8. The object in water appears in apparent depth due to refraction.

   The light ray which incident along the normal to the interface does not deviate.

   By this phenomenon, we can explain the travel of bird.

   If the bird travel exactly normal to the water surface, it must catch the bird in water.

   Note: It is better to give fish than bird in water.

9. Pushpa filled a water bottle with water and kept in fridge.

   As water freezed, it converts to ice.

   The volume of ice is more than the volume of water.

   So the ice breaks the bottle and expands.

10. The substance which has more specific heat value takes long time to raise its temperature.

   The substance which has less specific heat value takes short time to raise its temperature.

   If same quantity of heat supplied, Aluminium shows the least increase in temperature.

   Because Aluminium has less specific heat value.

11. Hold a concave mirror such that sunlight falls on it. Take a small paper and slowly move it in front of the mirror and find out the point where we get the smallest and brightest spot, which will be the image of the sun. (See to it that our paper is small so that it does not obstruct the incoming sun rays.) The rays coming from the sun parallel to the principal axis of concave mirror converge to a point. This point is called Focus.
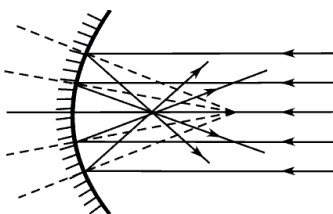
12.

Strong Acid	Strong Base	Weak Acid	Weak Base
H_2SO_4	NaOH	CH_3COOH	NH_4OH

13. (i) Applications of bleaching powder:

    (i) For bleaching cotton   (ii) For bleaching wood pulp (iii) For bleaching clothes

    (iv) For oxidizing substances (v) For disinfecting water   (vi) For preparing chloroform

  (ii) Applications of Sodium bicarbonate powder:

    (i) For edible purpose   (ii) For preparing cakes   (iii) For Antacid tablets

    (iv) For relief to acidity   (v) As antiseptic   (vi) As Fire extinguisher

Section - III

14A. The ice at $-10^{o}C$ converted to water at $0^{o}C$.

    The mass of ice cubes (m) = 50 g

    The energy required to convert ice at $-10^{o}C$ into ice at $0^{o}C$ = ms ΔT

$$= 50 \times 0.5 \times [0-(-10)]$$
$$= 25 \times 10$$
$$= 250 \text{ cal}$$

    The energy required to convert ice at $0^{o}C$ into water at $0^{o}C$ = mL

$$= 50 \times 80$$
$$= 4000 \text{ cal}$$

    The heat energy supplied to ice at $-10^{o}C$ for converting it water at $0^{o}C$ = 250 + 4000

$$= 4250 \text{ cal}$$

14B. A burning candle kept in front of a concave mirror of focal length 20 cm.

    (i) If candle kept at 30cm, The image is real, inverted and enlarged.

    (ii) If candle kept at 40cm, The image is real, inverted and same size to the object.

    (iii) If candle kept at 10cm, The image is virtual, erect and enlarged.

    (iv) If candle kept at 50cm, The image is real, inverted and diminished.

    Note: f = 20cm is not given in Question paper. So Teacher should award full marks for this if the student has attempted the question.
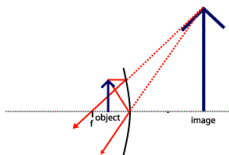
15A. (i) Sudha observes her smaller image in a mirror fitted to a bike.

      It is Convex mirror.
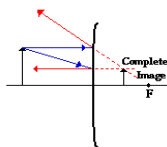
    (ii) Ravali observes her bigger, virtual image in a mirror in a beauty parlour.

      It is Concave mirror.

16A. (i) $CaO + H_2O \rightarrow Ca(OH)_2$

    (ii) $Zn + 2HCl \rightarrow ZnCl_2 + H_2$

    (iii) $Na_2SO_4 + BaCl_2 \rightarrow BaSO_4 + 2NaCl$

   (iv) $C_3H_8 + 5O_2 \rightarrow 3CO_2 + 4H_2O$

16B. (i) P^{H} value of a solution is 5. The concentration of H^{+} ions is 10^{-5}.

    (ii) Increasing order as per acidic nature : B, D, A, C

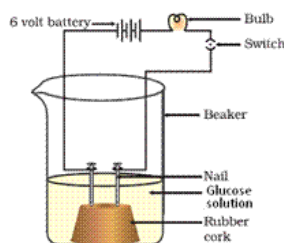   Increasing order as per basic nature : C, A, D, B

17A. Chemical displacement reaction: Take 10 grams of copper sulphate in a beaker. Add 20 ml of water. Blue colour copper sulphate aqueous solution is formed. Dip an iron nail in the solution. Keep the beaker undisturbed for 15 minutes. We observed a brown colour copper coated on iron nail. The solution colour fades. This is due to displacement reaction. Iron displaces the copper from copper sulphate.

$$Fe + CuSO_4 \rightarrow FeSO_4 + Cu$$
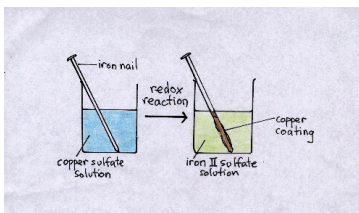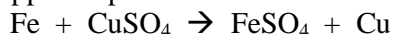
17B. Prepare solutions of glucose, alcohol, hydro chloric acid and sulphuric acid. Connect two different coloured electrical wires to graphite rods separately in a 100 ml beaker. Connect free ends of the wire to 6 volts battery through a bulb & a switch. Make a circuit.

Now pour some dilute HC*l* in the beaker and switch on the current. Repeat activity with dilute sulphuric acid and glucose and alcohol solutions separately. We will notice that the bulb glows only in acid solutions but not in glucose and alcohol solutions. Glowing of bulb indicates that there is flow of electric current through the solution.

18. A	**19.** C	**20.** B	**21.** D
22. A	**23.** B	**24.** A	**25.** A
26. C	**27.** C		

NAGA MURTHY- 9441786635
Contact at : nagamurthysir@gmail.com
Visit at : nagamurthy.weebly.com

WGL-SA-1
2015-16