ANDHRA PRADESH COMMON EXAMINATIONS

SUMMATIVE ASSESSMENT-I - SEPTEMBER-2016

GENERAL SCIENCE , Paper – I

(Physical Sciences)

(English Version)

Class-10 - Principles of Evaluation - PART-A &B

Q.No	Points for Evaluation	Marks allotted	Total Marks
1.	Copper has less specific heat value (or) Copper attains heat quickly. (or) **(any related point also suitable. Only one point is needed)**	1	1
2.	To slow down the oxidation process. (or) The item does not react with oxygen. (or) They do not spoil. **(any related point also suitable. Only one point is needed)**	1	1
3.	So we should not add water to acid. (or) We add acid to water slowly , drop by drop. **(any related point also suitable. Only one or two points are needed)**	1	1
4.	$\frac{1}{f} = (n_{ba}-1)\left(\frac{1}{R_1} - \frac{1}{R_2}\right)$ **(or)** $\frac{1}{f} = (n-1)\left(\frac{1}{R_1} - \frac{1}{R_2}\right)$ **(any related point also suitable. Only one point is needed)**	1	1
5.	(table below) **(any related points also suitable. Only two points are needed)**	2x1	2
6.	(i) Have you ever smelled the oils left for a long time ? (ii) How the food materials which had expired produce smell ? (iii) Why do we add oils while making pickles ? (iv) what happened if we use ghee for a long time ? (v) Why do potato chips flush bags filled with gas ? **(any related points also suitable. Only two points are needed)**	2x1	2
7.	(a) If 'f' is the focal length then $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$ (b) $\frac{1}{f} = \frac{1}{15} + \frac{1}{30} = \frac{2+1}{30} = \frac{3}{30} = \frac{1}{10}$ ➔ f = 10 cm (Negative) **(OR)** (a) If 'f' is the focal length then $f = \frac{uv}{u+v}$ (b) $f = \frac{15 \times 30}{15+30} = \frac{450}{45}$ = 10 cm (Negative) **(OR)** (a) If 'f' is the focal length then $f = \frac{R}{2}$ (b) object distance = image distance, the place of object is C' Radius of curvature "R" = 20 cm $f = \frac{R}{2} = \frac{20}{2}$ = 10 cm (Negative) **(any related point also suitable. Only two points are needed)**	1 1	2

	Evaporation		Boiling
1	Escaping of Molecules from the surface of a liquid at any temperature	1	The liquid phase changes to gaseous phase at a constant temperature
2	Cooling process.	2	Not cause cooling.
3	Surface phenomenon.	3	Bulk phenomenon.
4	Slow process	4	Quick process

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

8.	(i) Used in Textile industry to bleach the cotton and linen. (ii) Used in paper industry to bleach the wood pulp. (iii) Used to wash clothes. (iv) Used as oxidizing agent in chemical industries. (v) Used to kill germs in drinking water. (vi) Used in the preparation of Chloroform (vii) Used to clean Bath rooms and toilets (viii) Used to clean water tanks, to remove plaque. **(any related points also suitable. Only four points are needed)**	4 x ½	2
9.	Sin C = $\frac{1}{n}$	1	
	Sin C = $\frac{1}{1.5}$ ➔ Sin C = $\frac{10}{15}$ ➔ Sin C = $\frac{2}{3}$ C = 42° Note: Consider whether they write 42° or not. **(any related point also suitable. Only two points are needed)**	1	2
10A.	(a)10 gm of Ice at 0^oC melts to water at 0^oC. The latent heat of fusion of ice is (L) = 80 cal/gm. Heat Absorbed (Q_1) = mL = 10x80 = 800 cal	1	
	(b) 10 gm of water at 0^oC converts to water at 100^oC. Specific heat of water (s) = 1 cal/gm-^oC Heat absorbed (Q_2) = m.s.ΔT = 10x1x100 = 1000 cal	1	4
	(c)10 gm of water at 100^oC changes to steam at 100^oC. Latent heat of vaporization of water is (L) = 540 cal/gm. Heat Absorbed (Q_1) = mL = 10x540 = 5400 cal	1	
	So The amount of heat absorbed when 10 gm of Ice at 0^oC changes to 10 gm of steam at 100^oC (Q) = Q_1+ Q_2+ Q_3 = 800 + 1000 + 5400 = 7200 cal	1	
	(any related points also suitable. Only 4 points are needed)		
	(OR)		
10B.	Converging lens means convex lens. For convex lens 'u' taken as negative. Focal length (f) = 20cm Object distance (u) = -60cm Image distance (v) = ? Lens formula : $\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$ ➔ $\frac{1}{v} = \frac{1}{f} + \frac{1}{u} = \frac{1}{20} + \frac{1}{-60} = \frac{1}{20} - \frac{1}{60} = \frac{60-20}{20\ X\ 60} = \frac{40}{1200}$ ➔ $\frac{1}{v} = \frac{1}{30}$ ➔ v = 30cm Here Object is placed beyond C. So image is formed between F and C at 30 cm distance. Properties of image : (1) It is real (2) It is inverted (3) It is diminished.	½ ½ ½ ½ ½ 3 x ½	4
	(OR)		
	Here Object is placed beyond C. So image is formed between F and C Properties: (1) It is real (2) It is inverted (3) It is diminished. **(any related point also suitable. Only 4 points are needed)**	1 3x1	4

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

11A.	Cover wooden plank with white chart. Draw two perpendicular lines. Mark one line as NN which is normal to the line marked as MM. MM represents the line drawn along the interface of two media NN represents the normal drawn to this line at 'O'. Take a protractor and place it along NN. Then mark the angles from 0° to 90° on both sides of the line NN. Repeat the same on the other side of the line NN. Now place a semi-circular glass disc so that its diameter coincides with the interface line (MM) and its center coincides with the point O. Point a laser light along NN in such a way that the light propagates from air to glass through the interface at point O and observe the path of laser light coming from other side of disc.. Send Laser light along a line which makes15^o (i) with NN and see that it passes through point O. Measure corresponding angle of refraction (r). Note these values in table. Find **sin i**, **sin r** and also the ratio $\frac{Sin\ i}{Sin\ r}$. Do the same experiment for the angles of incidence such as 20°,25°, 30°,and 35°. In each and every case , we get the ratio $\frac{Sin\ i}{Sin\ r}$ as a constant. Note: Even they write reflection at plane mirror experiment, Means i = r then $\frac{Sin\ i}{Sin\ r}$ is a constant. Consider it as suitable answer. Note : Even they write refraction from rarer to denser medium experiment (or) Glass slab experiment. **(any related point also suitable. No need of number of points. Concept should be clear in minimum four points.)**	*	4
	(OR)		
11B.	(i) Take some amount of calcium carbonate in a test tube. (ii) Heat it with spirit lamp. (iii) Keep a burning stick at the mouth of test tube. (iv) The match stick puts off. (v) We Know that the gas is Carbon dioxide. (vi) Calcium carbonate produce calcium oxide ,carbon dioxide. (vii) This a decomposition reaction. **(any related point also suitable. No need of number of points. Concept should be clear in minimum four points.)**	*	4
12A.	(i) This reaction is a displacement reaction. Because Al (Aluminium) displaced Fe (Iron) from Fe_2O_3. (ii) This reaction is a Endothermic reaction. Because The symbol " Δ " indicate heating the substances. (iii) This reaction is an oxidation reaction. Because Oxygen is added to Aluminium (iv) This reaction is a reduction reaction. Because Oxygen is removed from Fe_2O_3. (v) This reaction is a Redox reaction. Because Both oxidation and reduction occurs in this reaction.	1 1 1 ½ ½	4
	(any related point also suitable. Only four points are needed)		
	(OR)		

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

12B.

Indicators	Acidic solution	Basic solution	Neutral solution
Red Litmus	Red	Blue	No change in colour
Blue litmus	Red	Blue	Blue
Phenolphthalein	No change in colour	Pink	No colour
Methyl Orange	Red	Yellow	Orange
Universal	Red/Orange /Yellow	Blue/Purple /Violet	Parrot green

(OR)

Indicators	Acidic solution	Basic solution	Neutral solution
Red Litmus	No change in colour	Blue	No change in colour
Blue litmus	Red	No change in colour	No change in colour
Phenolphthalein	No change in colour	Pink	No change in colour
Methyl Orange	Red	Yellow	No change in colour
Universal	Red/Orange /Yellow	Blue/Purple /Violet	Parrot green

(any related points also suitable.)

Any 6 blanks carries

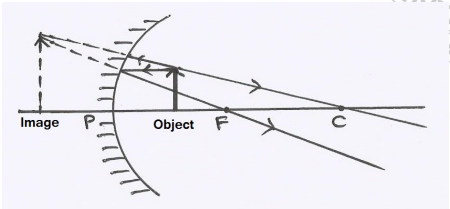
6 x½

The next 4 blanks carries

4x¹/₄

4

13A.



Properties of Image:
(i) Virtual image
(ii) Enlarged image
(iii) Erect image

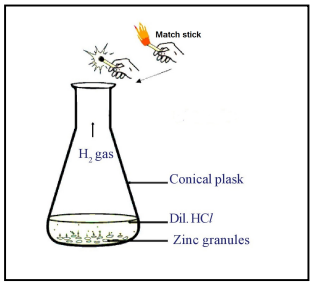
(any diagram related is sufficient. Meaningful diagram is enough.)

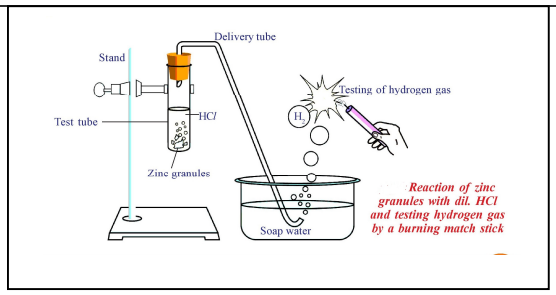
3 + 1

4

(OR) This question is not for testing drawing skill.

13B.





If we keep burning match stick near the hydrogen gas it will puts off with "Pop" sound.

(any diagram related is sufficient. Meaningful diagram is enough.)

3 + 1

4

Section - IV

S. No	Ans.	S. No	Ans.	S. No	Ans.	S. No	Ans.
14	C	19	A	24	B	29	B
15	A	20	A	25	A	30	B
16	C	21	D	26	A	31	B
17	D	22	B	27	A	32	C
18	A	23	C	28	B	33	D

Note : * means allot full marks. Each question carries ½ mark.

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