DISTRICT COMMON EXAMINATION BOARD
SUMMATIVE ASSESSMENT-I - OCTOBER-2016
GENERAL SCIENCE , Paper - I
(Physical Sciences)
(Telugu Version)

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

| Q.No | Points for Evaluation | Marks allotted | $\begin{gathered} \hline \text { Total } \\ \text { Marks } \\ \hline \end{gathered}$ |
| :---: | :---: | :---: | :---: |
| 1. | $2 \mathrm{NaOH}+\mathrm{H}_{2} \mathrm{SO}_{4} \rightarrow \mathrm{Na}_{2} \mathrm{SO}_{4}+2 \mathrm{H}_{2} \mathrm{O}$ <br> (any related point also suitable. Only one point is needed) | 1 | 1 |
| 2. | (i) Manufacturing of idols of gods <br> (ii) Decorating articles <br> (iii) Used as plaster for broken bones <br> (iv) To cover the inner part of the ceiling <br> (v) Smoothen the walls and buildings <br> (vi) In the manufacturing of moulds <br> (any related points also suitable. Only two points are needed) | $2 \mathrm{x}^{1 / 2}$ | 1 |
| 3. | Object always kept in front of the mirror. <br> The image distance is always be measured in the opposite direction of incident ray. <br> So "u" taken as negative. <br> (any related point also suitable. Only one point is needed) | 1 | 1 |
| 4. | $\begin{aligned} & \mathrm{P}=\frac{100}{f(\text { in } c m s)} \\ & \mathrm{P}=\frac{100}{25}=4 \mathrm{D} \end{aligned}$ <br> (any related point also suitable. Only two points are needed) | $2 \mathrm{x}^{1 / 2}$ | 1 |
| 5. | (i) $\mathrm{N}_{2}+3 \mathrm{H}_{2} \rightarrow 2 \mathrm{NH}_{3}$ <br> (ii) $2 \mathrm{H}_{2}+\mathrm{O}_{2} \rightarrow 2 \mathrm{H}_{2} \mathrm{O}$ <br> (any related point also suitable) | $2 \mathrm{x}^{1 / 2}$ | 1 |
| 6. | Properties of image : <br> (i) Erect image <br> (ii) Virtual image <br> (iii) Enlarged image <br> (any related point also suitable.) | $\begin{aligned} & 1 / 2 \\ & 1 / 2 \end{aligned}$ | 1 |
| 7. | Plancks's equation: $\mathrm{E}=\mathrm{h} \vartheta$ <br> $\mathrm{E}=$ Energy of radiation <br> h = Planck's constant <br> $\vartheta=$ Frequency of radiation <br> (any related point also suitable. Only two points are needed) | $4 \mathrm{x}^{1 / 4}$ | 1 |
| 8. | Uses of Washing soda $\left(\mathrm{Na}_{2} \mathrm{CO}_{3}\right)$ : <br> i) Sodium carbonate is used in glass, soap and paper industries. <br> ii) It is used in the manufacture of sodium compounds like borax. <br> iii) Washing soda is used as a cleaning agent. <br> iv) It is used for removing permanent hardness of water. <br> (any related points also suitable. Only two points are needed) | $2 \times 1$ | 2 |
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| 9. | Take a hibiscus flower and extract juice. <br> Keep a white paper in it and then made it dried. <br> Keep this paper strip in acid it converts to red. <br> Then keep the red paper in a base, it converts to blue. <br> (any related points also suitable. Like Beet root, Red cabbage) | $4 \times 1 / 2$ | 2 |
| :---: | :---: | :---: | :---: |
| 10. | If the angle between incoming and out going rays of light in the water droplet of rain is more than $42^{\circ}$, then the normal rain bow is not formed. Even the rain bow formed we cant observe it clearly in normal view. <br> (any related points also suitable. Only two points are needed) | $4 \mathrm{x}^{1 / 2}$ | 2 |
| 11. | Affecting factors of ionization energy <br> (i) Charge of nucleus <br> (ii) Screening effect <br> (iii) Electron configuration <br> (iv) Penetration power of orbitals <br> (v) Atomic radius <br> (vi) Binding energy <br> (any related points also suitable. Only four points are needed) | $4 \times 1 / 2$ | 2 |
| 12. | (i) Acid <br> (ii) Lemon juice <br> (any related points also suitable. Only two points are needed) | $2 \times 1$ | 2 |
| 13. | (i) Blue copper sulphate losts its colour. (Turns in to white) <br> (ii) Water droplets formed at the wall of test tube. <br> (any related points also suitable. Only two points are needed) | $2 \times 1$ | 2 |
| 14A. | (i) When object is placed at $\mathrm{C}_{2}$ of a convex lens, the image formed at $\mathrm{C}_{1}$. The image is real, inverted and same size as object. <br> (ii) When object is placed between $\mathrm{F}_{2}$ of P of a convex lens, the image is formed at the object side. <br> The image is virtual, erect and enlarged. <br> (any related points also suitable.) | $\begin{array}{\|c} \hline 2 \\ 2 \\ 2 \\ \\ \hline \begin{array}{l} \text { In each } \\ \text { diagram } \\ 1 \text { Mark } \end{array} \\ \begin{array}{l} \text { Four } \\ \text { points } \\ 4 x^{1 / 4} \end{array} \end{array}$ | 4 |
| 14B. | (i) If object placed at 10 cms means between $F$ and $P$, The image can be collected behind the mirror. <br> Virtual, Erect and enlarged image. <br> (ii) If object is placed at 45 cm means beyond C , the image can be collected between $F$ and $C$. Real, Inverted and small image. <br> (any related points also suitable.) | 2 <br> 2 <br> In each <br> diagram <br> 1 Mark <br> Four <br> points <br> $4 \mathrm{x}^{1 / 4}$ | 4 |

\begin{tabular}{|c|c|c|c|}
\hline 15A. \& \begin{tabular}{l}
(i) Path of light (OR) EF (OR) Incident ray \\
(ii) GH \\
(iii) \(60^{\circ}\) \\
(iv) Refractive index \\
(any related points also suitable.)
\end{tabular} \& \(4 \times 1\) \& 4 \\
\hline 15B. \& \begin{tabular}{l}
(i) H - Near point L - Least distance of distinct vision \\
(ii) Convex lens (OR) Bi convex lens \\
(iii) Adjusted path of light rays (OR) Diverted light rays \\
(iv) Hypermetropia (OR) Long sightedness \\
(any related points also suitable.)
\end{tabular} \& \(4 \times 1\) \& 4 \\
\hline 16A. \& \begin{tabular}{l}
(i) If an atom loose electrons, it converts in to Cation. \\
Ex: Sodium atomic number 11 can loose one electron
\[
\mathrm{Na} \rightarrow \mathrm{Na}^{+}+\mathrm{e}^{-}
\] \\
Ex: Magnesium atomic number 12 can loose two electrons
\[
\mathrm{Mg} \rightarrow \mathrm{Mg}^{+2}+2 \mathrm{e}^{-}
\] \\
(ii) If an atom gains electrons, it converts in to Anion. \\
Ex: Fluorine atomic number 9 can gain one electron
\[
\mathrm{F}+\mathrm{e}^{-} \rightarrow \mathrm{F}^{-}
\] \\
Ex: Chlorine atomic number 17 can gain one electron
\[
\mathrm{Cl}+\mathrm{e}^{-} \rightarrow \mathrm{Cl}^{-}
\] \\
(any related points also suitable.)
\end{tabular} \& \begin{tabular}{l}
1 \\
\(2 x^{1 / 2}\) \\
1
\[
2 x^{1 / 2}
\]
\end{tabular} \& 4 \\
\hline 16B. \& \begin{tabular}{l}
Hund's rule: Pairing of electrons in orbitals takes place only when all degenerate orbitals are singly occupied. \\
(i) Atomic number of carbon is 6 \\
(ii) First 2 electrons occupied in 1 s orbital of 1 s sub shell \\
(iii) Next 2 electrons occupied in \(2 s\) orbital of \(2 s\) sub shell \\
(iv) Next 2 electrons in \(2 p\) Sub shell \\
(v) The \(2 p_{x}, 2 p_{y}, 2 p_{z}\) are degenerate orbitals. \\
(vi) Electrons pairing takes place after filling atleast one electron in each orbital. \\
(vii) So electrons entered in to \(2 p_{x}\) and \(2 p_{y}\) orbitals. \\
The correct method is.. \(\square\) \(\uparrow\) \(\square\) \(\uparrow\) \\
(any related points also suitable. Only Concept is needed.)
\end{tabular} \& 1

3 \& 4 <br>

\hline 17A. \& | Material required : Graphite rods, Electric wires, 6V battery, Beaker, Bulb, Switch |
| :--- |
| Procedure : Prepare solutions of hydro chloric acid. |
| Connect two different coloured electrical wires to graphite rods separately in a 100 ml beaker. |
| Connect free ends of the wire to battery through a bulb \& switch. |
| Make a circuit. |
| Now pour dilute HC/ in the beaker and switch on the current. |
| We will notice that the bulb glows. |
| Glowing of bulb indicates that there is flow of electric current through the solution. |
| (any related points also suitable.) | \& 1

1
1 \& 4 <br>
\hline
\end{tabular}

17B. (i) Liberates heat (OR) We feel hot to touch the beaker
(ii) It produce colourless solution.
(iii) If we keep Red litmus paper, it turns in to blue
(iv) It is a base.
(any related points also suitable. Only four points are needed.)

PART - B

| S. No | Ans. | S. No | Ans. |
| :---: | :---: | :---: | :---: |
| 1 | B | 6 | C |
| 2 | A | 7 | C |
| 3 | B | 8 | C |
| 4 | C | 9 | D |
| 5 | D | 10 | C |

Note : * means allot full marks. Each question carries $1 / 2$ mark.

