

NTS Educators SSE (Science) Jobs Test

Sr	Questions	Answers Choice
1	Which of the following sources give discrete emission spectrum?	A. Incandescent electric bulb B. Sun C. Mercury vapour lamp D. Candle
2	There are discrete energy levels in atoms. It was first experimentally demonstrated by	A. Rutherford's experiment B. Frank Hertz experiment C. Marsden's experiment D. Sommerfield experiment
3	The minimum wavelength of the X-rays produced by electrons accelerated through a potential difference of V volts is directly proportional to	A. \sqrt{V} B. $V^{>2<sup>$ C. $1/\sqrt{V}$ D. $1/V$
4	The essential distinction between X-rays and y-rays is that	A. y-rays have smaller wavelength than X-rays B. y-rays emanate from nucleus while X-rays emanate from outer part of the atom C. y-rays have greater ionizing power than X-rays D. y-rays are more penetrating than X-rays
5	A photoelectric cell converts	A. Electrical energy to light energy B. Light energy to light energy C. Light energy to electrical energy D. Light energy to elastic energy
6	Ultra-violet radiation of 6.2 eV falls on an aluminium surface K.E of fastest electrons emitted is (work function = 4.2 eV)	A. 3.2×10^{-21} J B. 3.2×10^{-19} J C. 7×10^{-25} J D. 9×10^{-32} J
7	The frequency of the incident light falling on a photosensitive metal plate is doubled the kinetic energy of the emitted photoelectrons is	A. Double the earlier value B. Unchanged C. More than doubled D. Less than doubled
8	A monochromatic source of light is placed at a large distance d from a metal surface Photoelectrons are ejected at rate n , kinetic energy being E . If the source is brought nearer to distance $d/2$, the rate and kinetic energy per photoelectron become nearly	A. $2n$ and $2E$ B. $4n$ and $4E$ C. $4n$ and E D. N and $4E$
9	A photocell with a constant p.d of V volt across it illuminated by a point source from a distance of 25 cm. When the source is moved to a distance of 1 m, the electrons emitted by the photocell	A. Carry $1/4$ th their previous energy B. Are $1/6$ th as numerous as before C. Are $1/4$ th as numerous as before D. Carry $1/4$ th their previous momentum
10	Radio waves of constant amplitude can be generated with	A. Rectifier B. Filter C. FET D. Oscillator
11	Copper and germanium are cooled to 70 K from room temperature then	A. Resistance of copper increases while that of germanium decreases B. Resistance of copper decreases while that of germanium increases C. Resistance of both decreases D. Resistance of both increases
12	When n-type of semiconductor is heated	A. Number of electrons increases while that of holes decreases B. Number of holes increases while that of electrons decreases C. Number of electrons and holes remains same D. Number of electrons and holes increases equally
13	The part of a transistor which is heavily doped to produce large number of majority carriers is	A. Emitter B. Base C. Collector D. All of them

D. Any of the above depending on nature of transistor.

14 A p-n junction has a thickness of the order of

- A. 1 cm
- B. 1 mm
- C. 10^{-6} cm
- D. 10^{-12} cm

15 When boron is added as an impurity to silicon the resulting material is

- A. n type conductor
- B. n type semiconductor
- C. p-type conductor
- D. p-type semiconductor