



Padalsalai's Telegram Groups!

(தலைப்பிற்கு கீழே உள்ள லிங்கை கிளிக் செய்து குழுவில் இணையவும்!)

- Padalsalai's NEWS - Group
https://t.me/joinchat/NIfCqVRBNj9hhV4wu6_NqA
- Padalsalai's Channel - Group
<https://t.me/padasalaichannel>
- Lesson Plan - Group
<https://t.me/joinchat/NIfCqVWwo5iL-21gpzrXLw>
- 12th Standard - Group
https://t.me/Padalsalai_12th
- 11th Standard - Group
https://t.me/Padalsalai_11th
- 10th Standard - Group
https://t.me/Padalsalai_10th
- 9th Standard - Group
https://t.me/Padalsalai_9th
- 6th to 8th Standard - Group
https://t.me/Padalsalai_6to8
- 1st to 5th Standard - Group
https://t.me/Padalsalai_1to5
- TET - Group
https://t.me/Padalsalai_TET
- PGTRB - Group
https://t.me/Padalsalai_PGTRB
- TNPSC - Group
https://t.me/Padalsalai_TNPSC

Unit (7)
XII - PHYSICS
Second Mid Term model
Question paper (2019)

Total Marks: - 35 M

I Choose Correct Answer

5x1=5 M

Section - A.

- 1.) A particle of mass 3×10^{-6} g has the same wavelength as an electron moving with a velocity $6 \times 10^6 \text{ ms}^{-1}$. The velocity of the particle is ----
- a) $1.82 \times 10^{-18} \text{ ms}^{-1}$ b) $9 \times 10^{-2} \text{ ms}^{-1}$ c) $3 \times 10^{-31} \text{ ms}^{-1}$ d) $1.82 \times 10^{-15} \text{ ms}^{-1}$
- 2.) When a metallic surface is illuminated with radiation of wavelength λ , the stopping potential is V . If the same surface is illuminated with radiation of wavelength 2λ , the stopping potential is $\frac{V}{4}$. The threshold wavelength for the metallic surface is ----
- a) 4λ b) 5λ c) $5/2 \lambda$ d) 3λ
- 3.) The threshold wavelength for a metal surface whose photoelectric work function is 3.313 eV is ----
- a) $4125 \text{ \AA}$ b) $3750 \text{ \AA}$ c) $6000 \text{ \AA}$ d) $2062.5 \text{ \AA}$
- 4.) The Emission of electrons by the absorption of heat energy is called ---- emission.
- a) Photoelectric b) field c) thermionic
d) Secondary.

5. The work function for metals A, B and C are 1.92 eV, 2.0 eV and 5.0 eV respectively. The metals which will emit photoelectrons for a radiation of wavelength $4100 \text{ \AA}$ is/are - - - -
- a) A only b) both A and B c) all these metals d) none.

Section - B

3x2 = 6 M

II Answer any Three Questions

- 6) Give the definition of intensity of light and its unit?
- 7) State de Broglie hypothesis?
- 8) Why do metals have a large number of free electrons?
- 9) How will you define threshold frequency?
- 10) Define work function of a metal. Give its unit?

Section - C

3x3 = 9 M

III Answer any Three Questions

- 11) Describe briefly Davisson - Germer experiment which demonstrated the wave nature of electrons?
- 12) An electron and an alpha particle have same kinetic energy. How are the de Broglie wavelengths associated with them related?
- 13) How many photons per second emanate from a 50 mW laser of 640 nm ?
- 14) List out the laws of photoelectric effect.
- 15) Explain the quantum concept of light?

Section - D

3 x 5 = 15 M

IV

Answer any Three questions

- 16-) a) Explain the effect of potential difference on photoelectric current.
(or)
b) List out the laws of photoelectric effect.

17-)

- a) Describe briefly Davisson - Germer experiment which demonstrated the wave nature of electrons.
(or)
b) A 150 W lamp emits light of mean wavelength of 5500 Å.
If the efficiency is 12% find out the number of photons emitted by the lamp in one second.

- 18-) a) Give the construction and working of photo emissive cell.
(or)

- b) Name an experiment which shows wave nature of the electron. which Phenomenon was observed in this experiment using an electron beam?

All the best.

prepared by

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