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JEE MAIN STRUCTURE OF ATOM — PHOTOELECTRIC EFFECT — PYQS

Max. Marks: 12 **Questions:** 3

Section A (MCQ) — 2 questions

Q.1 The work functions of two metals (M_A and M_B) are in the 1 : 2 ratio. When these metals are exposed to photons of energy 6 eV, the kinetic energy of liberated electrons of M_A:M_B is in the ratio of 2.642 : 1. The work functions (in eV) of M_A and M_B are respectively.

[JEE Main 2026 (Online) 23rd January Evening Shift]

(1) 3.1, 6.2 (2) 1.5, 3.0 (3) 2.3, 4.6 (4) 1.4, 2.8

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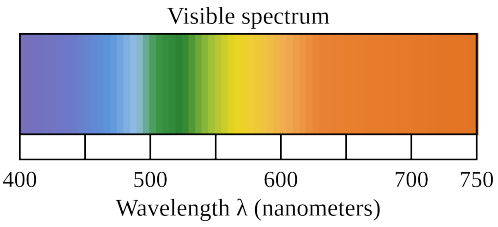
Q.2



Which of the following statements are correct, if the threshold frequency of caesium is 5.16×10^{14} Hz?

A. When Cs is placed inside a vacuum chamber with an ammeter connected to it and yellow light is focused on Cs, the ammeter shows the presence of current.

B. When the brightness of the yellow light is dimmed, the value of the current in the ammeter is reduced.

C. When a red light is used instead of the yellow light, the current produced is higher with respect to the yellow light.

D. When a blue light is used, the ammeter shows the formation of current.

E. When a white light is used, the ammeter shows formation of current.

Choose the correct answer from the options given below: [JEE Main 2025 (Online) 7th April Morning Shift]

(1) B, C and D Only (2) A, C, D and E Only

(3) A, B, D and E Only (4) A, D and E Only

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Section B (Numerical) — 1 question

Q.3 The surface of sodium metal is irradiated with radiation of wavelength x nm. The kinetic energy of ejected electrons is 2.8×10^{-20} J. The work function of sodium is 2.3 eV. The value of x is _____ $\times 10^2$ nm. (Nearest integer)

(Given : $h = 6.6 \times 10^{-34}$ J s; 1 eV = 1.6×10^{-19} J; c = 3.0×10^8 m s^{-1})

[JEE Main 2026 (Online) 2nd April Evening Shift]

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ANSWER KEY

Section A (MCQ) — 2 questions

Ques.	1	2									
Ans.	3	3									

Section B (Numerical) — 1 question

Ques.	3										
Ans.	5										