

Reg. No. : 0432C0140

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For the candidates admitted from 2004 and onwards)

M.Sc. DEGREE EXAMINATION, APRIL 2005.

Second Semester

Physics

QUANTUM MECHANICS — II

Time : Three hours

Maximum : 75 marks

Answer ALL questions.

SECTION A — ($20 \times \frac{1}{2} = 10$ marks)

Choose the correct answer :

1. The scattering cross-sections are measured in barns and one barn is equal to

- (a) 10^{-21} cm^2 (b) 10^{-22} cm^2
(c) 10^{-24} cm^2 (d) 10^{-27} cm^2 .

2. The relationship between scattering cross-section and scattering amplitude is

(a) $\sigma(\theta, \phi) = |f(\theta, \phi)|$

(b) $\sigma(\theta, \phi) = |f(\theta, \phi)|^2$

(c) $\sigma(\theta, \phi) = \frac{1}{|f(\theta, \phi)|}$

(d) $\sigma(\theta, \phi) = \frac{1}{|f(\theta, \phi)|^2}$.