

G H Raisoni Institute of Engineering & Technology, Pune
Question Bank for CAE 1 (unit 1+2)
Subject: Engineering Physics

	Unit I
1	Derive an expression for the displacement produced when an electric field acts parallel to electron motion.
2	Derive an expression for the displacement produced when an electric field acts perpendicular to electron motion.
3	What is deflection sensitivity? Give an expression for deflection sensitivity.
4	Explain how an electron beam can be made to bend either towards or away from the normal to an equipotential surface.
5	Electron accelerated by a potential of 250 V enter the electric field at an angle of incidence 50° and get reflected through an angle of 30° . Find the potential difference between two regions.
6	Derive an expression for the displacement produced when an electric field acts parallel to electron motion.
7	Draw block diagram of CRO. Write down the name of seven basic sections of CRO
8	Write down four applications of CRO
	Unit 2
1	Obtain the equation of path difference between the reflected rays, when the monochromatic light is incident on uniform thickness film. Also derive conditions of brightness and darkness for reflected rays.
2	Write down the conditions of brightness and darkness for a monochromatic light beam transmitted from a thin parallel film of transparent material.
3	Explain the use of thin film interference as an antireflection coating.
4	Explain how the phenomenon of interference is utilized in testing the optical flatness of transparent surface.
5	Explain with diagram how interference principle is used to design antireflection coating
6	A Monochromatic light emitted by a broad source of wavelength 5800 Å falls normally on two plates of glass which enclosed a wedge shape film. The plates touch at one end are separated at a point 15 cm from that end by a wire of diameter 0.05 mm. Find the fringe width
7	A parallel beam of light $\lambda = 5890 \text{ Å}$ is incident on glass plate of refractive index $\mu = 1.5$ such that angle of refraction in to plate is 60° . Calculate the smallest thickness of the plate which will make it appear dark by reflection.

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A soap film of refractive index $\mu = 4/3$ and thickness 1.5×10^{-4} cm is illuminated by white light incident at angle 45° . The light reflected by it is examined by spectroscopy in which it is found a dark band corresponding to wavelength of 5000 \AA . Calculate order of interference band.