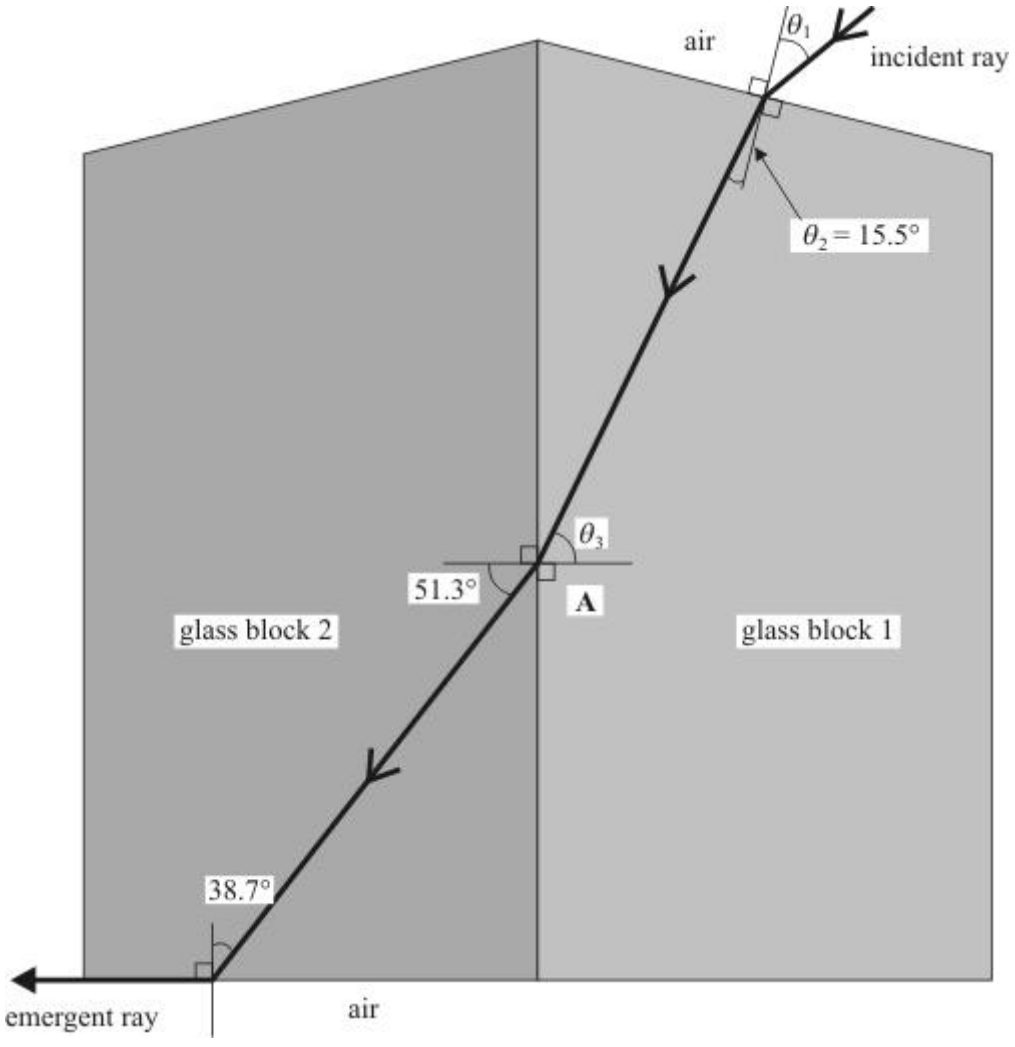
Name of the Student:_____
Max. Marks : 19 Marks **Time : 19 Minutes**

Q1.

The figure below shows a ray of light passing from air into glass at the top face of glass block 1 and emerging along the bottom face of glass block 2.

refractive index of the glass in block 1 = 1.45



(a) Calculate

(i) the incident angle θ_1,

_____

_____

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(ii) the refractive index of the glass in block 2,

(iii) the angle θ_3 by considering the refraction at point **A**.

(7)

(b) In which of the two blocks of glass will the speed of light be greater?

Explain your reasoning.

(2)

(c) Using a ruler, draw the path of a ray partially reflected at **A** on the figure above. Continue the ray to show it emerging into the air. No calculations are expected.

(2)

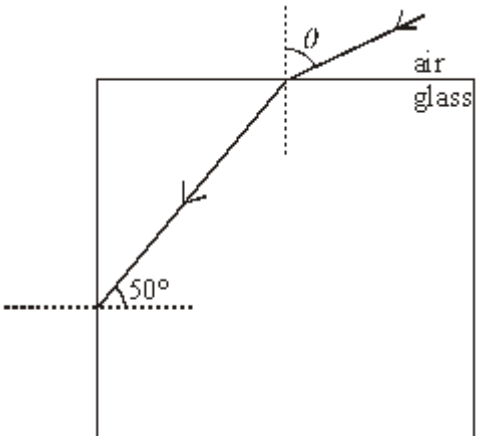
(Total 11 marks)

Q2.

The diagram shows a cube of glass. A ray of light, incident at the centre of a face of the cube, at an angle of incidence θ, goes on to meet another face at an angle of incidence of 50°, as shown in the figure bellow

critical angle at the glass-air boundary = 45°

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(a) Draw on the diagram the continuation of the path of the ray, showing it passing through the glass and out into the air.

(3)

(b) Show that the refractive index of the glass is 1.41

_____

_____

_____

(2)

(c) Calculate the angle of incidence, θ.

_____

_____

_____

_____

(3)

(Total 8 marks)

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