Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

(a) Sketch, on the axes below, the response curves for the colour cones of the eye. Label thew avelength axis with a scale appropriate for your curves.

(4)

(b) In terms of receptors,

(i) give the condition for two different images to be resolved by the eye,

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(ii) explain why finer detail can be seen in bright light than in dim light.

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(3)

(c) (i) State what is meant by *persistence of vision*.

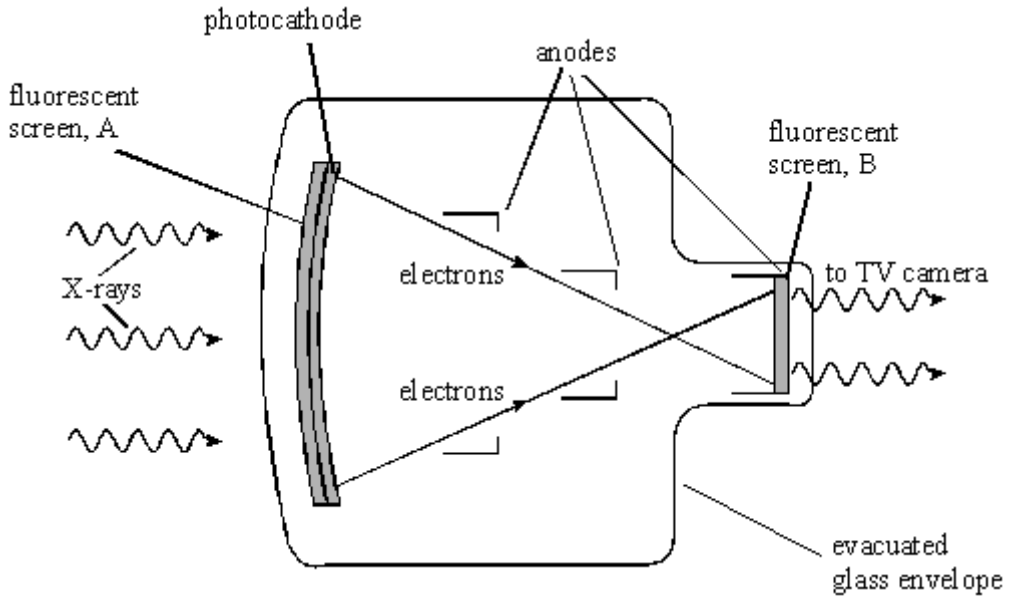
_____

(ii) Give an example of a practical situation where persistence of vision is used to advantage.

(2)
(Total 9 marks)

Q2.

The diagram shows a fluoroscopic image intensifier.



(a) State the purpose of:

(i) the fluorescent screen, A,

(ii) the photocathode,

(iii) the anodes,

(iv) the fluorescent screen, B.

(4)

(b) Give **one** example of a medical application for which an image intensifier might be used.

Explain why the use of an image intensifier is required.

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(2)

(Total 6 marks)

Q3.

(a) A converging lens of focal length 4.0 cm is used to form an inverted image of a small upright object. The image produced is the same size as the object.

(i) State the distance of the lens from the object for this image to be formed.

_____

(ii) Draw a ray diagram to show how the image is formed. Mark the positions of the object, image and the principal foci of the lens.

(3)

(b) (i) The lens in part (a) is replaced by another converging lens of focal length 12.0 cm, the distance between the lens and object staying the same. Calculate the distance between the image formed and the lens.

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_____

_____

(ii) State **three** properties of this image.

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_____

(3)

(Total 6 marks)