	Utech
Name:	
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Invigilator's Signature :	

## CS/B.OPTM/SEM-3/BO-301/2011-12 2011

### **VISUAL OPTICS (OPTICS – II)**

Time Allotted: 3 Hours Full Marks: 70

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable.

# GROUP – A ( Multiple Choice Type Questions )

1. Choose the correct alternatives for any *ten* of the following :

 $10 \times 1 = 10$ 

- i) Airy disc is observed in
  - a) Chromatic aberration
  - b) Diffraction of light
  - c) Spherical aberration
  - d) Distortion.
- ii) In case of keratometry, we use ....... Purkinje image.
  - a) Ist

b) IInd

c) IIIrd

d) IVth.

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iii)	Dep	th of field is	rela	ated to pupillary size.
	a)	directly	b)	inversely
	c)	no relation	d)	none of these.
iv)	The vertical meridian is more curved than the horizontal meridian in			
	a)	with the rule astigmat	ism	
	b)	against the rule astign	natisı	n
	c)	oblique astigmatism		
	d)	bioblique astigmatism		
v)	Foster fuch fleck is found in			
	a) degenerative myopia			
	b)	astigmatism		
	c)	aphakia		
	d)	none of these.		
vi)	Which Purkinjee image is erect?			
	a)	I	b)	II
	c)	III	d)	IV.
vii)		he crystalline lens m active error will be	oves	forward, the resulting

Hyperopia

Aphakia.

b)

d)

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Myopia

Astigmatism

a)

c)



viii) The far point of a – 4.00 D patient is at

a) 20 cm

b) 25 cm

c) 50 cm

- d) infinity.
- ix) The stimulus to accommodation is
  - a) blur image
- b) proximity of image
- c) convergence
- d) all of these.
- x) Number of cardinal points in eye is
  - a) 6

b) 8

c) 4

- d) 5.
- xi) Smaller pupil can give rise to
  - a) spherical aberration
  - b) chromatic aberration
  - c) diffraction
  - d) coma.

#### **GROUP - B**

#### (Short Answer Type Questions)

Write short notes on any three of the following.

 $3 \times 5 = 15$ 

- 2. Schiener disc.
- 3. Spherical aberration.
- 4. Depth of field and depth of focus.
- 5. Luminance and blur tolerance.

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#### (Long Answer Type Questions)

Answer any three of the following.



6. Describe any one theory regarding mechanism of accommodation. Define amplitude of accommodation. How will you measure the amplitude of accommodation?

5 + 3 + 7

- Define and classify astigmatism. Describe clinical features of degenerative myopia.
- 8. Describe the aetiology of hypermetropia. A patient with visual acuity of 6/36 is improved by addition of + 4.00 D and attained 6/6. Further addition of + 1.00 D does not alter the visual acuity but further addition causes deterioration of visual acuity. After cycloplegia he again accepts another + 1.00. Calculate the absolute, facultative, manifest, latent & total Hyperopia of that patient.  $5 \times 3$
- 9. a) Discuss the various theories of accommodation briefly.
  - b) What is amplitude of accommodation ? How is it measured ? 9+6

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