# ARKA JAIN University, Jharkhand

**2nd Semester Final Examination – 2018-19**

**Subject: Anatomy**

**Course: B.Optometry**

**Time:** 2 Hour

**Full Marks:** 50

**Pass Marks:** 25

- Candidates are required to give their answers in their own words as far as practicable.
- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
- **Part- B** contains **FIVE** questions out of which **FOUR** questions are to be answered.
- **Part-C** contains **THREE** questions out of which **TWO** questions are to be answered.

## PART A

**Q.1) Multiple Choice Questions /Fill in the blanks** **(10x1=10)**

i) The antero- posterior diameter of the eyeball is

a) 23mm b) 23.5mm

c) 24mm c) 24.5mm

ii) Choroid is

a) Vascular layer b) Membranous layer

c) Crystalline layer d) Muscular layer

iii) Meibomian glands are

a) Endocrine glands b) Modified sebaceous gland

c) Modified sweat gland d) None of these

iv) Sclera has

a) 2 parts b) 3 parts

c) 5parts d) 6 parts

v) Middle vascular coat of eyeball consists of following except

a) Choroid b) Ciliary body

c) Iris d) Retina

vi) The Lacrimal gland is located in the ..... part of the root of the orbit.

a) Antero lateral b) Lateral

c) Antero medial d) Medial

vii) End of Spinal cord is called ..... .

viii) ..... rectus muscle is responsible for Abduction.

ix) Fovea centralis is a depressed area located about 3mm ..... to optic disc.

x) Formation of aqueous humour is by

a) Ciliary muscle

b) Ciliary process

c) Choroid

d) Retina

## PART B

**Answer any Four:** **(4x5=20)**

**Q.2)** Parts of Conjunctiva.

**Q.3)** Actions of Extra ocular muscles.

**Q.4)** Short notes on Cerebrum & Brain stem.

**Q.5)** Crystalline lens.

Q.6) Structure of Cornea with the help of diagram.

## PART C

**Answer any two:** **(2x10=20)**

**Q.7)** Explain in brief about Spinal cord.

**Q.8)** Explain the various muscles of the eyelid.

**Q.9)** Write in details about Segment of the eye.

# ARKA JAIN University, Jharkhand

**2nd Semester Final Examination – 2018-19**

**Subject: O.Physiology**

**Time:** 2 Hour

**Course: B.Optometry**
**Full Marks:** 50
**Pass Marks:** 25

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## PART A

**Q.1) Multiple Choice Questions /Fill in the blanks** **(10x1=10)**

i) The size of normal pupil is
a) 2-4mm
b) 1-2mm
c) 5-8mm
d) None of these

ii) The Outermost layer of tear film is .....

iii) The primary colours are all except
a) Yellow
b) Blue
c) Red
d) Green

iv) Gland of Wolfring is
a) Lacrimal gland
b) Salivary gland
c) Accessory Lacrimal gland
d) Pituitary gland

v)Dioptric value of Cornea is.....

vi) The muscle responsible for blinking of eye is
a) Medial rectus
b) Ciliary Muscle
c) Sphincter papillae
d) Orbicularis Oculi

vii) Nerve supply of Cornea is..... nerve.

viii) Depth of anterior chamber is
a) 2.5mm
b) 3mm
c) 3.5mm
d) 4mm

ix) Light peak is
a) Light-sensitive
b) Light-insensitive
c) Both
d) None of these

x) Action of Inferior Oblique is .....

## PART B

**Answer any Four:** **(4x5=20)**

**Q.2)** Coats of Eye ball

**Q.3)** Short notes on visually evoked potential.

Q.4) Circulation of Aqueous humor.

**Q.5)** Accommodation

**Q.6)** Binocular Vision

## PART C

**Answer any two:** **(2x10=20)**

**Q.7)** Explain EOM, their actions & Nerve supply.

**Q.8)** Describe the Visual pathway with the help of suitable diagram.

**Q.9)** Explain Corneal transparency

# ARKA JAIN University, Jharkhand

**2nd Semester Final Examination – 2018-19**

**Subject: Ocular biochemistry**

**Time:** 2 Hour

**Course: B.Optometry**
**Full Marks:** 50
**Pass Marks:** 25

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- Question Paper is divided into **Three Parts –A, B & C**
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- **Part-C** contains **THREE** questions out of which **TWO** questions are to be answered.

## Set-1

## PART A

**Q.1) Multiple Choice Questions /Fill in the blanks** **(10x1=10)**

i) A type of collagen named Vitrosin is found in
a) Vitreous humour b) corneal stroma
c) Lens cortex c) Aquous humour

ii) Example of second order neuron is
a) Ganglion cell b) Amacrine cell c) Bipolar cell d) Horizontal cell

iii) Pigment Lutin is found within.....

iv) pH of Tear in open eye condition is.....

v) Total number of cranial nerves is
a) ten c)twelve
c) thirty d)none of these

vi) Corneal dehydration is maintained by.....

vii) Overweight/Obesity may lead.....

viii) A.D.H. or Anti Diuretic Hormone is also called -
a) Prolactin b) Aldosterone
c) Vasopressin d) None of the above

ix) InactiveTrypsinogen is converted into active Trypsin by -
a) Enteropeptidase b) Enteroreductase
c) Enterokinase d) None of the above

x) Normal Corneal temperature.....

## PART B

**Answer any Four:** **(4x5=20)**

**Q.2)** Immune system of anterior segment.

**Q.3)** Application of radioisotope in medicine.

**Q.4)** Write short notes on serum createnin and urea.

**Q.5)** What is bilirubin? Write short notes on Gilbert syndrome.

**Q.6)** Dialysis

## PART C

**Answer any two:** **(2x10=20)**

**Q.7)** Explain function and composition of Tears.

**Q.8)** Explain Diabetes and its metabolic regulation.

**Q.9)** Explain carbohydrates and its metabolism.

# ARKA JAIN University, Jharkhand

**2nd Semester Internal Examination – 2018-19**

**Subject: Physical Optics**

**Time:** 2 Hour

**Course: B.Optometry**
**Full Marks:** 50
**Pass Marks:** 25

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- Question Paper is divided into **Three Parts –A, B & C**
- **Part-A** is compulsory.
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## PART A

**Q.1) Multiple Choice Questions / Fill in the blanks** **(10x1=10)**

i) In an S.H.M. during the motion
a) kinetic energy is conserved
b) potential energy is conserved
c) total energy is conserved
d) the amplitude is conserved

ii) The property of coherent sources is
a) equal phase difference over a period of time
b) equal or nearly equal amplitude
c) both wave of the same wavelength
d) none of these

iii) If the number of lines/cm of a grating increases, the resolving power of the grating
a) increases
b) decreases
c) remains constant
d) becomes zero

iv) Which of the following phenomena proves the transverse nature of light?
a) Diffraction
b) Interference
c) Polarization
d) Dispersion

v) In Fraunhoffer diffraction, the incident wavefront is
a) Plane
c) Spherical
c) Cylindrical
d) None of these

vi) Young's experiment establishes that
a) light has wave nature
b) light has particle nature
c) light has neither particle nor wave nature
d) light has both particle and wave nature

vii) Which one of the following properties of light does not change with the nature of the medium?

a) Velocity
b) Wavelength
c) Amplitude
d) Frequency

viii) The locus of all points in a medium having the same phase of vibration is called

a) Crest
b) Trough
b) Wavelength
d) Wavefront

ix) The blue colour of the sky is due to

a) Diffaction
b) Reflection
c) Polarization
d) Scattering

x) A thing that emits its own light is called

a) luminous
b) non-luminous
c) incandescent
d) bright

## PART B

**Answer any Four:** **(4x5=20)**

**Q.2)** Explain fluorescence and phosphorescence.

**Q.3)** Explain spontaneous & stimulated emission.

**Q.4)** Light falls on two slits 2mm apart and produces an interference pattern on a screen which is 1m away from the slits. The fourth-order bright band is 1mm from the center of the pattern. What is the wavelength of the light used?

**Q.5)** The distance between two consecutive bright bands in a Young's double slit experiment is 0.32mm when red light of wavelength 6400 $A^{\circ}$ is used. By how much will this distance change if this light is substituted by blue light of wavelength 4800 $A^{\circ}$ with the same setting.

**Q.6)** In Young's double slit experiment, interference bands are produced on the screen placed 1.5m from two slits 0.15mm apart & illuminated by light of wavelength 6000 $A^{\circ}$. Find the (a) fringe width & (b) the change in fringe width if the screen is taken away from the slits by 50cm.

## PART C

**Answer any two:** **(2x10=20)**

**Q.7)** Explain mathematically the production of plane polarized, elliptically polarized & circularly polarized light.

**Q.8)** Derive the expression for resultant displacement & intensity at any point due to the superposition of two waves.

**Q.9)** Derive Brewster's Law. Find the Brewster's angle of light that is traveling from water (n = 1.33) into air ?