



**ARKAJAIN**  
**University**  
Jharkhand

16/5/22

**4<sup>th</sup> Semester End Term Examination: 2021-22.**

**Subject** : Visual Optics II  
**Course** : B. Optometry  
**Full Marks** : 70  
**Roll No:** .....  
**Time** : 3 Hours.

**Instructions to the Candidates:**

- Read the question paper very carefully.
- Start writing from 2nd page onwards; Don't Write On The 1st Page Backside.
- Question Paper is divided into Three Parts -A, B & C.
- Part-A is containing 12 multiple choice questions.
- Part- B containing SIX questions out of which FOUR questions are to be answered.
- Part C containing FOUR questions out of which TWO questions are to be answered.
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**PART - A**

**Multiple Choice Questions**

[12x1=12]

1. Maddox V test is used in diagnosis of  
a) Heterophoria  
b) Heterotropia  
c) Astigmatism  
d) Diplopia
2. In duochrome test red becomes clear when  
a) Hypermetropia is fully corrected  
b) Hypermetropia is over corrected  
c) Hypermetropia is under corrected  
d) Myopia is over corrected
3. When a cycloplegic retinoscopy has been performed using cycloplentolate, how many dioptres should be deducted to compensate the ciliary tone?  
a) 1.00D  
b) 0.75D  
c) 0.50D  
d) 0.00D
4. The colour of pupil in Aphakia is  
a) Jet black  
b) Red glow  
c) White  
d) Grey



3. Explain magnification. Describe the types of magnification with example and diagram.
4. Describe the types of binocular balancing.

5. Accommodation in Aphakic eye absent
- completely
  - partially
  - alternatively
  - all of these
6. Depth of field is ..... related to pupillary size.
- directly
  - inversely
  - no relation
  - none of these

7. The relationship between spectacle refraction and ocular refraction is
- $K = F / (1 - dF)$
  - $K = F / (1 + dF)$
  - $K = (1 + dF) / F$
  - $K = (1 - dF) / F$

8. Depth of focus is ..... related to pupil size.
- directly
  - inversely
  - no relation
  - none of these

- 9) The horizontal meridian is more curved than vertical in
- with the rule astigmatism
  - against the rule astigmatism
  - oblique astigmatism
  - bi-oblique astigmatism

10. Spherical equivalent for + 4.00 D. Sph. / - 2.00 D CYL  $\times 90^\circ$  is
- 3.00 D. Sph.
  - + 4.00 D. Sph.
  - + 3.00 D. Sph.
  - None of these

PART - B  
[4x7=28]

Answer any FOUR out of SIX  
(Write short notes of the following)

- Near and far point of accommodation
- Fogging technique
- Accommodative Insufficiency
- Duochrome Test
- Depth of field & depth of focus
- Post mydriatic test

PART - C  
[2x15=30]

Answer any TWO out of FOUR

- Define Retinoscopy. Discuss the technique, principles, and practice of Retinoscopy
- Define accommodation. Discuss in detail the anomalies of accommodation and the management





**4<sup>th</sup> Semester End Term Examination: 2021-22.**

**Subject** : **Optometric Optics-2 & Dispensing Optics** Roll No: .....

**Course** : **B.Optomtry**

**Full Marks** : **50**

**Time** : **3 Hours.**

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**PART - A**

**Multiple Choice Questions**

[10x1=12]

1. Which system measures the PD using a corneal reflex?  
a) Essilor pupillometer  
b) Topcon PD meter  
c) PD rule  
d) All of these
2. Tinting of lenses decreases the  
a) Transmittance  
b) Reflection  
c) Scratch resistance  
d) all of these
3. Toughest ophthalmic lens for industrial use is  
a) CR-39  
b) Crown glass  
c) Polycarbonate  
d) Transition
4. In the soft design PAL, intermediate zone is  
a) Shorter  
b) longer  
c) Both (a) and (b)  
d) None of these
5. Refractive index of CR-39 is  
a) 1.52  
b) 1.25



- c) 1.35
  - d) 1.49
6. Supra frame is a
    - a) Metal frame
    - b) Plastic frame
    - c) Semi rimless frame
    - d) Rimless frame
7. Polycarbonate is used in most industrial protective eyewear because of
- a) Light weight
  - b) impact resistance
  - c) Flexibility
  - d) all of these
8. Toughest ophthalmic lens for industrial use is
    - a) CR-39
    - b) Crown glass
    - c) Polycarbonate
    - d) Transition
  9. In the soft design PAL, intermediate zone is
    - a) Shorter
    - b) Longer
    - c) Both (a) and (b)
    - d) None of these
  10. Refractive index of Crown glass is
    - a) 1.52
    - b) 1.25
    - c) 1.35
    - d) 1.39

**PART - B**

**[4x7=28]**

**Answer any FOUR out of SIX**

1. What are lenticular lenses? Describe the different types with diagrams.
2. Write a short note on importance of nose pads.
3. Write a short note on recumbent and Fresnel prism
4. Write a short note on faults in lenses.
5. Write a short note on standard alignment of frame
6. Write a short note on datum system.

**PART - C**

**[2x15=30]**

**Answer any TWO out of FOUR**

1. Describe the different types of frames and its selection. What are the different criteria to select a frame?
2. The degree of hardness and softness of PAL depends on four basic design elements. Discuss hard and soft design with reference to above statement
3. What do mean by progressive addition lenses (PALs)? Draw a labeled diagram of a PAL. Describe the following:
  - a) Large upper circle
  - b) Smaller lower circle







5. Reception area in Hospital should contain
  - a) Feedback register/form
  - b) First aid kit
  - c) Consent form
  - d) All of these
6. Core values of optometry clinic
  - a) Service
  - b) Excellence
  - c) Justice
  - d) All
7. Who is responsible for patient safety?
  - a) Doctors
  - b) Nurses
  - c) Patients
  - d) Everyone
8. What is the most effective way to prevent the spread of infection?
  - a) Covering your mouth when you cough
  - b) Washing your hands
  - c) Wearing a face mask
  - d) All
9. What is the leading cause of accidental injury deaths in the India?
  - a) Drug overdose
  - b) Road traffic accident
  - c) Falls
  - d) Choking
10. If you have a question about your care, what's the best thing you can do?
  - a) Research it on the Internet.
  - b) Ignore it and trust everything will work out.
  - c) Speak up and ask your health care provider.
  - d) Ask a friend or family member to find the answer.

**PART - B**

**Answer any FOUR out of SIX**

[4x5=20]

1. Define quality assurance?
2. Explain quality assurance process?
3. What is basic life support?
4. What are goal and objective of BLS?
5. Write a short note on quality assurance management.
6. Write a short note on biomedical waste management.

**PART - C**

**Answer any TWO out of FOUR**

[2x10=20]

1. Describe CPR and mention its process step by step in detail?
2. Describe infection and prevention control
3. Describe disaster management?
4. Describe biomedical waste management and prevention in detail.





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**4<sup>th</sup> Semester End Term Examination: 2021-22.**

**Subject : Basic & Ocular Pharmacology**

**Roll No: .....**

**Course : B. Optometry**

**Full Marks : 50**

**Time : 3 Hours.**

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**PART - A**

**Multiple Choice Questions**

**[10x1=10]**

1. Atropine is
  - a) Anti-viral drugs
  - b) Corticosteroids
  - c) Anticholinergic drugs
  - d) Antibiotics
2. ACE inhibitor is
  - a) Prazocin
  - b) Acetazolamide
  - c) Chloramphenicol
  - d) Captopril
3. Which of the followings are the effector pathways of GPCR
  - a) c-AMP pathway
  - b) IP3-DAG pathway
  - c) Channel regulation
  - d) All of the above
4. Which of the following components of Eye forms Tear Film?
  - a) Meibomian glands
  - b) Lacrimal gland
  - c) Goblet cells of Conjunctiva
  - d) All of the above
5. Effect of combination is greater than the individual effects of the components
  - a) Antagonism
  - b) Potentiation
  - c) Additive
  - d) None

6. Under physiological conditions the rate limiting enzyme in the generation of angiotensin II is
- |                   |                   |
|-------------------|-------------------|
| a) Renin          | b) Bradykinin     |
| c) Aminopeptidase | d) Angiotensinase |
7. Majority of drugs cross biological membranes primarily by
- |                      |                          |
|----------------------|--------------------------|
| a) Passive diffusion | b) Facilitated diffusion |
| c) Active transport  | d) Pinocytosis           |
8.  $\beta$ - blocker is
- |                  |                |
|------------------|----------------|
| a) Acetazolamide | b) Prazocin    |
| c) Aspirin       | d) Propranolol |
9. Alcohol dehydrogenase inhibitor is
- |               |               |
|---------------|---------------|
| a) Metformin  | b) Fomepizole |
| c) Disulfiram | d) Carboline  |
10.  $\alpha$ - blocker is
- |                |             |
|----------------|-------------|
| a) Caspofungin | b) Prazocin |
| c) Vasopressin | d) Losartan |

### PART - B

Answer any FOUR out of SIX

[4x5=20]

- Briefly discuss about Tear substitute.
- What is Glaucoma? Classify it & enlist various classes of drugs used for the treatment of Glaucoma.
- Write mechanism of action of GABA, benzodiazepine & barbiturates.
- Pictorial representation of Ocular drug delivery system.
- Define Mydriatics and Miotics? Explain how these drugs affects papillary size.
- Write notes on adrenergic receptors.

### PART - C

Answer any TWO out of FOUR

[2x10=20]

- What is Hypertension? Classify antihypertensive drugs and write mechanism of action of drug affecting RAAS system.
- Discuss various routes of drug administration in details.
- Write notes on synthesis, storage & release of Acetylcholine.
- Classification of Oral hypoglycemic drugs and its mechanism of action.





**4<sup>th</sup> Semester End Term Examination: 2021-22.**

**Subject : Ocular Disease 2 & Glaucoma**  
**Course : B. Optometry**  
**Full Marks : 50**

**Roll No: .....**

**Time : 3 Hours.**

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**PART - A**

**Multiple Choice Questions**

**[10x1=10]**

1. Which of the following is a condition of retina?  
a) Berlin's edema  
b) RP  
c) RP  
d) All of the above
2. The weakening in the retinal capillaries happen due to  
a) Hypoglycemia  
b) Hyperglycemia  
c) Glycosuria  
d) None of the above
3. RP causes all of the following, except  
a) Death  
b) Difficulty in walking at night  
c) Ascending stairs  
d) Reading
4. AREDS stands for  
a) All Relative Eye Diseases Survey  
b) Age Related Eye Disorders Study  
c) Age Regardless Eye Disease Society  
d) Aqueous Retinal and other Eye Disease Study
5. Leakage of blood in deeper layers of retina causes  
a) Flame shaped hemorrhages  
b) Microaneurysms  
c) IRMA  
d) Dot and blot hemorrhages



6. When a patient gives false answers to the assessment, it is called-
- Non-compliant
  - Malingering
  - Both a. and b.
  - Oculus sinister
7. \_\_\_\_\_ reflex is a test for Malingering
- Schrodinger's
  - Bell's
  - Hess'
  - Menace's
8. Perforating injury has
- Only one entry wound
  - No wound
  - One entry and one exit wound
  - Scalded skin
9. The gold standard method for measuring IOP is
- Tonopen
  - Applanation Tonometry
  - Perkin's tonometer
  - Schiottz tonometer
10. In Sturge Weber's syndrome, buphthalmous is present on the same side as that of
- Retinoblastoma
  - Glioma
  - Hemangioma
  - Cataract

[4x5=20]

**PART - B**

**Answer any FOUR out of SIX**

- Write a short note on the observations made in a nystagmus patient
- Draw a detailed and well labeled diagram of RP
- Write the differences between-
  - Ischemic CRVO and Non ischemic CRVO
  - CRVO and CRAO
- Explain the process of Applanation Tonometry. What is the standard range of IOP?
- Describe-
  - Lenticonus
  - Nuclear sclerosis
- Describe any two retinal degenerations.
  - Geographical atrophy
  - Wet AMD

[2x10=20]

**PART - C**

**Answer any FOUR**

- What is Geographical atrophy? What tests that can be used to identify on DR and the stages of DR.

...ing injury has  
 ... entry and one exit wound  
 ... the gold standard method for measuring IOP is  
 ... Perkin's tonometer  
 ... In Sturge  
 ... Retinoblastoma  
 ... Hemangioma

**PART - B**

**Answer any FOUR out of SIX**

- Write a short note on the observations made in a nystagmus patient
- Draw a detailed and well labeled diagram of RP
- Write the differences between-
  - Ischemic CRVO and Non ischemic CRVO
  - CRVO and CRAO
- Explain the process of Applanation Tonometry. What is the standard range of IOP?
- Describe-
  - CRVO and CRAO
  - Ischemic CRVO and Non ischemic CRVO
- Write the differences between-
  - CRVO and CRAO
  - Ischemic CRVO and Non ischemic CRVO

[4x5=20]

**PART - B**

[4x5=20]

...ing injury has  
 ... entry and one exit wound  
 ... the gold standard method for measuring IOP is  
 ... Perkin's tonometer  
 ... In Sturge  
 ... Retinoblastoma  
 ... Hemangioma





**4<sup>th</sup> Semester End Term Examination: 2021-22.**

**Subject : Pathology**  
**Course : B. Optometry**  
**Full Marks : 70**

**Roll No: .....**

**Time : 3 Hours.**

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**PART - A**

**Multiple Choice Questions**

**[12x1=12]**

1. Conjunctivitis is a type of \_\_\_\_\_  
a. Infection  
c. Both A and B  
b. Inflammation  
d. None of the above.
2. Uveitis is a type of \_\_\_\_\_  
a. Infection  
c. Both A and B  
b. Inflammation  
d. None of the above
3. Micro-organism responsible for causing TB is  
a. Corynebacterium tuberculae  
c. Mycobacterium tuberculosis  
b. Mycotic tuberculae  
d. Mycobacterium tuberculae
4. Example of ocular neoplasia is  
a. Retinoblastoma  
c. CME  
b. ROP  
d. NPDR
5. Diagnosis of embolism is seen in which ocular pathology?  
a. ARMD  
c. CRAO  
b. PDR  
d. None of the above
6. \_\_\_\_\_ is an example of ocular auto-immune disorder  
a. Reiter's Syndrome  
c. Both a and b  
b. Sjogren Syndrome  
d. None of the above



7. Classical sign of fungal keratitis is
- a. Feathery border of ulcer
  - b. Purulent discharge
  - c. Itching
  - d. Burning sensation
8. Ocular pathology arising from syphilis infection
- a. Perineuritis
  - b. AON
  - c. Papilledema
  - d. All of the above
9. \_\_\_\_\_ is used for allergic conjunctivitis
- a. Brimonidine
  - b. Pilocarpine
  - c. Olopatadine
  - d. Dexamethasone
10. \_\_\_\_\_ is used for bacterial conjunctivitis
- a. Brimonidine
  - b. Pilocarpine
  - c. Gatifloxacin
  - d. Dexamethasone

**PART - B**

**Answer any FOUR out of SIX**

**[4x7=28]**

1. Describe the steps of infection in human body in brief.
2. What is the role of TB in spreading ocular disorder? Explain
3. Write in brief about fungal corneal ulcer.
4. Describe in brief about Inclusion conjunctivitis
5. Deduce the relation between Leprosy and Lagophthalmos.
6. Describe about the iris pearls in Lepromatous Leprosy

**PART - C**

**Answer any TWO out of FOUR**

**[2x15=30]**

1. Describe the clinical features and management plan for Anemic Retinopathy.
2. Describe in brief about the clinical manifestations of Central Retinal artery blockage with appropriate treatment
3. Describe the development of Lymph angiogenesis in eye
4. What is the clinical manifestation of Central retinal and Branch retinal vein occlusion with proper management.





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**University**  
Jharkhand

**4<sup>th</sup> Semester End Term Examination: 2021-22.**

**Subject : Medical Psychology**  
**Course : B.Optomety**  
**Full Marks : 70**

**Roll No: .....**

**Time : 3 Hours.**

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**PART - A**

**Multiple Choice Questions**

**[10x1=10]**

1. Medical psychology deals with
  - a) Cognition
  - b) Behavior
  - c) Mind
  - d) A II of the above
2. Emotional learning is \_\_\_\_\_ learning
  - a) Cognitive
  - b) Effective
  - c) Verbal
  - d) Motor
3. Sensory memory is \_\_\_\_\_ memory
  - a) Iconic
  - b) Long term
  - c) Both
  - d) None
4. When we try options to establish a task and discard the unsuccessful methods, this way of learning is called
  - a) Serial learning
  - b) Verbal learning
  - c) Motor learning
  - d) Trial and Error learning
5. \_\_\_\_\_ is the second step in memory processing
  - a) Selection
  - b) Retrieval
  - c) Encoding
  - d) Storage



6. The Need-Want-Satisfaction is a chain reaction which follows around-
  - a) Personality
  - b) Memory
  - c) Motivation
  - d) Intelligence
7. Small units that integrate to form personality are called-
  - a) Traits
  - b) Characteristics
  - c) Emotions
  - d) IQ
8. Visually impaired population use \_\_\_\_ senses mostly for adapting
  - a) Hearing
  - b) Smell
  - c) Tactile
  - d) Vision
9. Which of the following is an intervention for psycho-social adjustments?
  - a) Grief therapy
  - b) Group counselling
  - c) Cognitive therapy
  - d) All of the above
10. Check the incorrect pair-
  - a) Sociodemographic factor- age
  - b) Poor health behaviors- substance abuse
  - c) Functional impairment- restricted ADLs
  - d) Treatment- vision loss

### PART - B

Answer any SIX out of EIGHT

[6x5=30]

1. Significance of health psychology in the clinical practice
2. Write a short note on home adaptations that can be provided to VI
3. Explain the factors affecting learning process in human
4. Elaborate: - motivation and the cycle of need - want - satisfaction
5. Write the steps involved in memory processing with proper flowchart
6. Write points on how to develop intelligence
7. Explain what kind of adjustments can be made within the family to encourage self-esteem in the VI
8. Explain the concept of motivation

### PART - C

Answer any THREE out of FOUR

[3x10=30]

1. Categorize and describe the categories of memory
2. Elaborate on the psychosocial adjustment interventions that can be provided to the VI
3. Explain the various areas and methods to physically help a VI individual to adjust to the environment.
4. Name and explain the various learning methods.