# Rajiv Gandhi University of Health Sciences, Karnataka

**II year B.Sc. Optometry Degree Examination – 14-Jan-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## OPTOMETRICS OPTICS – (RS-3)
## Q.P. CODE: 3111

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary

**LONG ESSAYS (Answer Any Three)** **3 x 10 = 30 Marks**

1. Explain the various types of PAL designs. Discuss the advantages and disadvantages of PALs.
2. Mention the various parts of a frame with the help of a diagram. explain the various types of frames in detail
3. Explain the properties of crossed cylinders with help of example.
4. Find the Sph-cyl equilent to the pair of obliquely crossed cylinder -3-00 D cyl x 10 /+2.00 D cyl x 60

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. Calculate the edge substance 'e' of a Plano concave lens made in crown glass (1.523) of surface power -10.0 D , diameter of lens 44 mm and center thickness 0.6mm
6. Explain the Types of bifocals.
7. Explain 5 troublesome reflections from the spectacle lens surface with a neat diagram
8. Explain briefly about the prentice rule.
9. Explain in briefly the effective power of a prism in near vision
10. Transpose the following into the alternate sphero cylinder form.
    a) +0.50 D sph/+1.50 D cyl x 160
    b) -3.25D sph / +1.75 D cyl x 35
11. Which spectacle tool are required to produce a -10.0 D sphere in periscopic form made in glass of refractive index 1.64 assume that the tool are calibrated for the refractive index 1.523.

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. What is frame front?
13. What is toric lens? Give some examples.
14. What is abbey number? Give some examples.
15. What is called transposition? Explain with example
16. State the surface power required to produce the following lenses in perisocopic form (a) +1.25 (b)-3.75
17. What is refractive index?
18. Advantages of aspheric lens
19. What is called tool power?
20. What is called rotation test?
21. Explain the term front tilt bend and length tilt bend

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 17-Jan-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## Visual Optics (RS-3)
## Q.P. Code: 3112

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Answer Any Three)** **3 x 10 = 30 Marks**

1. What is accommodation? Discuss the different types and measurement technique with procedure.
2. What is Retinoscopy? Explain the procedure in detail.
3. Define Hyperopia and write a note on management of Hyperopia.
4. Explain Accommodative insufficiency in detail with its management.

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. Write a note on MEM Retinoscopy.
6. Explain the advantage of using LOGMAR chart over Snellen's chart.
7. Write a note on Cycloplegic refraction.
8. Types of astigmatism with examples
9. Write on Presbyopia and its treatment option.
10. Define Anisometropia and Aniseikonia.
11. Describe Sturm's conoid.

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. Define vergence.
13. Ophthalmoscopic findings of Myopia
14. Purkinje image
15. Define 1 Meter angle.
16. Define depth of field.
17. Find out far point of corrected myopic eye having -2.00Dsph power.
18. Write down uses of stenopic slit.
19. MEM Retinoscopy
20. AC/A ratio
21. Hill of vision

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 19-Jan-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## CEVS AND OPTOMETRIC INSTRUMENTS
## (REVISED SCHEME-3)
## Q.P. CODE: 3113

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

**LONG ESSAYS (Answer Any Three)** **3 x 30 = 30 Marks**

1. What is Tonometry? What are the different techniques? Explain the procedure of applanation tonometry.
2. What are the different electrophysiological tests? Explain any one of them in detail.
3. Explain slit lamp on the basis of instrumentation and different illumination techniques with example.
4. What is keratometer? Mention its uses. Explain it on the basis of principle & types.

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. Components of trial set
6. Write about SRI and SAI indices
7. Indications & Contraindications of Gonioscopy
8. What are the differences between direct and binocular indirect ophthalmoscope?
9. Describe amsler chart. What are the different types available?
10. What are the different test plates available in Ishihara colour vision testing?
11. Write about the reliability indices in the single field analysis print out

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. Arden ratio
13. Benefits of contact lens over spectacles
14. Best form lenses
15. Projection chart
16. Indication of VEP
17. What is ETDRS chart? Example?
18. 90D lenses
19. Define visual acuity. Example
20. Name two types of colour arrangement tests.
21. The accessories of slit lamp

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 21-Jan-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## MICROBIOLOGY PATHOLOGY PHARMACOLOGY
## Q.P. CODE: 3114
## SECTION A – MICROBIOLOGY AND PATHOLOGY (40 MARKS)
## (REVISED SCHEME – 3)

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.
**(Note : Both QP Codes 3114 and 3115 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (Answer any Two)** **2 x 10 = 20 Marks**

1. Define sterilization and classify. Explain in detail about Hot air oven.
2. Give an account of Gram Negative Bacteria.
3. Write pathology of inflammation of retina in detail.

**SHORT ESSAYS (Answer any Two)** **2 x 5 = 10 Marks**

4. Give brief account of viral conjunctivitis.
5. Mention difference between acute and chronic inflammation.
6. Complications of wound healing.

**SHORT ANSWERS** **5 x 2 = 10 Marks**

7. Name any two universal precautions used in hospital.
8. Tubercle.
9. Define indicator media. Give examples.
10. Name any two parasites infecting eyes.
11. Staphylococcus aureus.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 21-Jan-2022**

**Time: 3 Hours** **Max. Marks: 80 Marks**

## MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY
## SECTION B: PHARMACOLOGY (40 MARKS)
## (REVISED SCHEME – 3)
## Q.P. CODE: 3115

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

**(Note : Both QP Codes 3114 and 3115 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (Answer Any Two)** **2 x 10 = 20 Marks**

1. Explain mode of action and clinical significance of sympathomimetic mydriatics.
2. Explain with examples the various Parenteral routes of drug administration
3. What are the ideal properties of Local Ocular anesthetics? Explain the mechanism of action, significance and adverse effects of this drug.

**SHORT ESSAYS (Answer Any Two)** **2 x 5 = 10 Marks**

4. Adverse reactions of corticosteroids as drugs.
5. Short note on Diuretics
6. Explain various factors affecting renal and non-renal excretion of the drug.

**SHORT ANSWERS** **5 x 2 = 10 Marks**

7. Half life of a drug
8. Name anti-glaucoma drugs.
9. Name anti-inflammatory drugs used in the eye.
10. Adverse effects of miotics.
11. Importance of Fluorescein sodium in ocular usage

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 14-Jan-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## OPTOMETRIC OPTICS & DISPENSING (RS-4)
## Q.P. CODE: 3346
## (QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. What are bifocal lenses? Explain its types and uses with neat labelled diagram.

2. Explain the types of frames, its parts and measurements.

   **Or**

   Use formula method to find the resultant spherocylinder lens power. When two obliquely crossed cylinders lens are combined, Lens 1 : plano +3.00 DC x 90, Lens 2 : plano +3.00 DC x 70

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. How to inspect the quality of lenses?

4. Explain Rotary prisms and effective prism power in near vision.

5. Write a note on lens maker equation.

   **Or**

   Steps for measuring distance and near Inter Pupillary Distance (IPD).

6. What are the factors influencing photochromatic effects of lens.

7. Write a note on Polaroid Lenses.

8. Write a note on Astigmatic lenses.

9. Explain best form spectacle lens.

10. What are the safety standards for Ophthalmic lenses?

    **Or**

    A +6.50 D lens before the Right Eye is decentered 3mm Nasalward. What amount of prism is induced and what is the base orientation?

11. What is Boxing system? Illustrate with a diagram.

12. Write a note on Spherometer.

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Difference between tints and filters.

14. Prentice rule.

15. Any four materials used in making frames.

16. Coma aberration.

17. Toughened lenses.

18. Absorptive glasses.

19. Pantoscopic tilt.

20. Crutch glasses.

21. Measurements required for dispensing a bifocal lens.

22. Types of glazing.

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 17-Jan-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## VISUAL OPTICS (RS-4)
## Q.P. CODE: 3347

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Define and classify Myopia. What are the various options for correction of myopia?
2. Discuss various methods of subjective verification of refraction.
   **OR**
   Define accommodation and discuss the mechanism of accommodation. How the near point of accommodation is measured.

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. Discuss various components of hypermetropia.
4. Discuss AC/A ratio
5. Optics of prism and application of prism in Ophthalmology
   **OR**
   Write in detail about binocular balancing.
6. Write in detail about convergence and type of convergence.
7. Discuss the anomalies of accommodation.
8. Discuss Pelli-Robson Contrast sensitivity tests.
9. Briefly explain the mechanism of cycloplegic refraction. What are the drugs used in it.
10. Discuss in detail about the illumination of consultation room.
    **OR**
    Discuss the ocular refraction vs spectacle refraction.
11. Describe the etiology of aphakia.
12. Write a short note on trial set.

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Types of contrast sensitivity loss.
14. Differentiate aphakia and Pseudophakia.
15. What is Aniseikonia?
16. Find out the spherical equivalent of
    A) -3.00 / - 1.00 x $90^0$
    B) -2.50 / - 0.75 x $120^0$
    C) -0.75 / - 0.050 x $110^0$
17. Uses of Maddox rod.
18. Short note on simple transposition.
19. Write about Spherical aberration.
20. What is Bell retinoscopy?
21. What is refractive ametropia? Give examples.
22. What is dry refraction? What is significance?

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 19-Jan-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## CEVS AND OPTOMETRIC INSTRUMENTS (RS-4)
## Q.P. CODE: 3348

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Define Tonometry. With the help of diagram, explain the principles used in tonometry. Write shortly on applanation tonometer

2. Write about direct ophthalmoscope, its theory and its use

   **Or**

   Write the optics of Retinoscope. Write about different types of retinoscopes

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. Write a short note on measurement of NPA
4. Write a short note on principle and instrumentation of gonioscopy
5. Explain stages of FFA

   **Or**

   Write note on phoropter. Compare between trial frame and phoropter
6. Name the illumination techniques used in slit lamp procedure. Explain any two of them
7. Briefly write down on ORBSCAN report
8. Write about color vision theories
9. Write about principle and instrumentation of aberrometer
10. Define lensometry. Write about the sources of error in lensometry

    **Or**

    Write a note on tangent screen visual field testing
11. Describe in detail about the extra ocular muscle balance tests performed clinically
12. Write about A-scan Ultrasonography

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Principle of keratometer
14. Define visual acuity. List the visual acuity charts based on preferential looking principle
15. Write two sources of error while doing keratometry
16. Explain hill of vision
17. Define VEP. What are the clinical indications for VEP?
18. Differentiate between anterior and posterior OCT
19. Why do we use blue filter in slit lamp?
20. What is Scheiner's principle?
21. What is potential acuity meter? Write its clinical uses
22. Explain the meaning of 24-2 and 30-2 in Humphrey visual field testing

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 21-Jan-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## MICROBIOLOGY, PATHOLOGY & PHARMACOLOGY (RS-4)
## Section A: MICROBIOLOGY & PATHOLOGY (50 Marks)
## Q.P. CODE: 3349

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary
**(Note: Both QP Codes 3349 and 3350 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (First Question Choice)** **1 x 10 = 10 Marks**

1. Give an account on causative agents, pathogenesis and treatment of Mycotic Keratitis.
   **Or**
   Write pathology of inflammation of retina in detail.

**SHORT ESSAYS (Question No 5 choice)** **5 x 5 = 25 Marks**

2. Briefly describer bacterial Endopthalmitis.
3. Epidemic Keratoconjunctivitis.
4. Briefly describe the spread of tuberculosis.
5. Write in detail about gram positive cocci.
   **Or**
   Write in detail about autoclave.
6. Laboratory diagnosis of leprosy.

**SHORT ANSWER** **5 x 3 = 15 Marks**

7. Name any three uses of hot air oven.
8. Thrombosis.
9. Chemotaxis.
10. What is inflammation?
11. Antigen.

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 21-Jan-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY (RS-4)
## Section B – PHARMACOLOGY (50 marks)
## Q.P. CODE: 3350

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary
**(Both QP codes 3349 and 3350 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (First Question Choice)** **1 x 10 = 10 Marks**

1. Enumerate local anesthetics. Explain the mechanism of action and mention the uses and adverse effects

   **Or**

   Write briefly on drugs induced ocular toxicities

**SHORT ESSAYS (Question No 5 choice)** **5 x 5 = 25 Marks**

2. Pilocarpine
3. Write three mydriatics and mention their ophthalmic uses
4. Write the merits and demerits of routes of drug administration
5. Uses and adverse effects f diuretics

   **Or**

   Benzodiazepines
6. Ocular diagnostic agents

**SHORT ANSWER** **5 x 3 = 15 Marks**

7. Tear substitutes
8. Mention any three antitubercular drugs and one adverse effect for each
9. Enlist three general anaesthtics and their clinical uses
10. Name any three immunosuppressants and mention three uses
11. Name any three ocular infections and write one drug used for each infection

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II year B.Sc. Optometry Degree Examination – 18-Jul-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## OPTOMETRICS OPTICS – (RS-3)
## Q.P. CODE: 3111

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

**LONG ESSAYS (Answer Any Three)** **3 x 10 = 30 Marks**

1. What is bifocal lens? Explain the types of Bifocal lenses, prescribing aspects of bifocal lenses along with their advantages and disadvantages with appropriate diagrams
2. What is progressive additional lens (PALs)? Explain the common troubleshooting
3. Explain the facial measurement to be taken for prescribing a customized spectacle
4. Explain the types of frames, its constructions and markings

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. What is prentice rule? A person is wearing -8.75 DS and -10.25 DS in his right and left eye respectively. The monocular distance PD was 30mm and 31.5mm in right and left eye respectively. The geometric center of the spectacle dispensed was 28.5 and 32.7mm for right and left lenses respectively. Calculate the prismatic effect caused for both the eyes
6. Vertex power and vertex distance with diagram
7. Polaroid lenses
8. What are the difference between boxing and datum system?
9. Principles of anti-reflection coating with diagram
10. Explain any ten faults seen in lenses
11. Explain tilt induced power

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. Drop ball test
13. Meniscus lenses
14. Transpose to negative shero-cylindrical format
    a) -9.50 DC x 25 / -7.75 DC x 115
    b) +10.25 DC x 75 / +6.25 DC x 165
15. Advantages of hi-index lenses
16. Ghost images
17. Waves and polish burn in lens defects
18. If right eye is having 12$\Delta$ of hypertropia, divide the prisms between the two eyes equally
19. Chromatic aberrations
20. Mirror coating
21. Pantascopic tilt

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II year B.Sc. Optometry Degree Examination – 20-Jul-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## Visual Optics (RS-3)

## Q.P. Code: 3112

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

**LONG ESSAYS (Answer Any Three)** **3 x 10 = 30 Marks**

1. Write a note on steps of subjective refraction.
2. Explain schematic and reduced Eye.
3. Enlist various contrast sensitivity charts. Explain any two.
4. Write a note on dynamic retinoscopy. Explain any two procedure in detail with examples.

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. Cycloplegia.
6. Write a short note on trial case accessories and their uses.
7. Write a note on types of myopia and its management.
8. Enlist the condition where you would like to do binocular subjective refraction and justify the reason.
9. Convergence insufficiency.
10. Write a note on various techniques used to measure Ac/A ratio.
11. Write a note on cardinal point of optical system.

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. What is Radical Retinoscopy?
13. What is night Myopia?
14. Write two difference between Snellen’s and Logmar chart.
15. Write two use of JCC.
16. Define convergence.
17. What is simple myopic astigmatism? Give one example.
18. Write name of two cycloplegic drugs commonly used for pediatric patient.
19. What is metamorphopsia?
20. What is latent hyperopia?
21. Write two uses of Maddox rod.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 22-Jul-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## CEVS AND OPTOMETRIC INSTRUMENTS (RS-3)
## Q.P. CODE: 3113

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

**LONG ESSAYS (Answer Any Three)** **3 x 30 = 30 Marks**

1. Explain in detail about optics of retinoscope. Differentiate plane mirror retinoscopy from concave mirror
2. Differences between direct and indirect gonioscope. Differences between each type of indirect gonioscopes
3. Explain Goldman Applanation tonometer's principle, optics along with interpretation of the results
4. What are the different programs available in a manual Humphrey visual field analyzer? Explain the interpretation indices in a manual Humphrey visual field analyzer

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. What is RAPD and what are its gradings?
6. Differentiate IDO from DO
7. Explain the different types of charts available for non-verbal patients
8. What is Scheiner's principle? Advantage and disadvantages of same
9. Write short note on clinical procedure of B-scan
10. Explain in detail about color arrangement test and commercially available instruments
11. Explain quad maps of Orbscan report

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. Transpose to negative sherocylindrical format
    a) -4.00 DC x 90 / +7.50 DC x 180
    b) -1.25 DC x 155 / +3.75 DC x 65
13. Reasons for doubling of mites and irregular mires in a manual keratometer
14. What are the uses of exophthalmometer?
15. What are the uses of cobalt blue filter in slit lamp?
16. What is Hruby lens and where is it used?
17. What is a lens gauge?
18. What is the principle of ERG?
19. Convert to logMAR
    a) 3/36
    b) 6/24
20. What are the indications of brightness acuity test and potential acuity meter?
21. The following powers were measured in a lensometer which had error of -0.50D, calculate the actual power of the given lenses
    a) +7.25 DC x 40 / + 8.25 DC x 130
    b) +3.25 DS / -7.50 DC x 10

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 25-Jul-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## MICROBIOLOGY PATHOLOGY PHARMACOLOGY
## Q.P. CODE: 3114
## SECTION A – MICROBIOLOGY AND PATHOLOGY (40 MARKS)
## (REVISED SCHEME – 3)

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.
**(Note : Both QP Codes 3114 and 3115 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (Answer any Two)** **2 x 10 = 20 Marks**

1. Define culture media. Give detailed account of various culture media used in Microbiology Laboratory.
2. Define disinfection. Give detailed account of various disinfectants used in hospitals.
3. Define chronic inflammation. What are the types of chronic inflammation? Outline the general features and systemic effect of chronic inflammation.

**SHORT ESSAYS (Answer any Two)** **2 x 5 = 10 Marks**

4. Hot air oven.
5. Anaerobic culture methods.
6. Write a note on enriched media.

**SHORT ANSWERS** **5 x 2 = 10 Marks**

7. Define thrombocytopenia.
8. Name any two fungi infecting eyes.
9. Chemotaxis.
10. Normal value of hemoglobin.
11. Lepra (foam) cells.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 25-Jul-2022**

**Time: 3 Hours** **Max. Marks: 80 Marks**

## MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY
## SECTION B: PHARMACOLOGY (40 MARKS)
## (REVISED SCHEME – 3)
## Q.P. CODE: 3115

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

**(Note : Both QP Codes 3114 and 3115 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (Answer Any Two)** **2 x 10 = 20 Marks**

1. Write in detail about factors affecting drug actions.
2. Classify anaesthetics with examples. Write mechanism of action, uses and adverse effects of lignocaine.
3. What are the factors governing the pharmaco-kinetics of drugs. Discuss in detail pharmacokinetics of occular drugs.

**SHORT ESSAYS (Answer Any Two)** **2 x 5 = 10 Marks**

4. Antihypertensive drugs.
5. Oral anti diabetic drugs.
6. Pharmacology of the drugs used in ocular myasthenia, Dystonia and Glaucoma.

**SHORT ANSWERS** **5 x 2 = 10 Marks**

7. Mention three drugs used in viral infection.
8. Mention three Antileprotic drugs.
9. Mention three drugs in Glaucoma.
10. Mention three ocular adverse effects of corticosteroids.
11. Tear substitutes.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 18-Jul-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## OPTOMETRIC OPTICS AND DISPENSING (RS-4)
## Q.P. CODE: 3346

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Write in detail about aberration in ophthalmic lenses
2. Find the sph-cyl equivalent to the pair or cross cylindrical lens – 3.00 D cyl@30/ +2.00 D cyl @ 80

   **Or**

   Explain types of spectral lens materials and its advantage and disadvantage

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. Short note on boxing system and datum system
4. Explain the steps for Toric transposition with examples
5. Short note on manufacturing ophthalmic blanks

   **Or**

   Steps for simple transposition with two examples
6. Short note on PAL
7. Short note on classification of frame
8. Write on FDA ISI and ANSI
9. Types of bifocal lenses with diagram
10. Short note on special type of spectacle frames

    **Or**

    Derive Sag formula
11. IPD measurements for both distance and near
12. Steps for spherocylinder lens neutralization

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. High index lenses
14. Aspherical lenses and lenticular lenses
15. Abbe number
16. Photochromatic lenses
17. Prentice rule
18. Vertex distance
19. Principle of ARC coatings
20. Significance of ADD power
21. Rotary prism
22. Lens measure

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 20-Jul-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## VISUAL OPTICS (RS-4)
## Q.P. CODE: 3347

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Elaborate on theories of colour vision. Write about Ishihara pseudoisochromatic test plates
2. Detail about effective power and spectacle magnification

   **OR**

   Elaborate on the anomalies of accommodation

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. Write on binocular balancing
4. Write short note on depth of field and depth of focus
5. Write a note on sign conventions

   **OR**

   Write a note on AC/A ratio
6. Write about presbyopia
7. Classification of astigmatism
8. Explain on schematic and reduced eye
9. Write on Cycloplegic refraction
10. Write on duochrome test

    **OR**

    Write on WFDT
11. Short note on illumination of consultation room
12. Optical aberration of eye

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Tonus allowance
14. Polarization
15. Astigmatic fan
16. Light and dark adaptation
17. JCC
18. Radical retinoscopy
19. Pseudoaphakia
20. LogMar chart
21. Fusional convergence
22. Phoropter

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 22-Jul-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## CEVS AND OPTOMETRIC INSTRUMENTS (RS-4)
## Q.P. CODE: 3348

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Define keratometry. Explain instrumentation theory and clinical uses of same
2. Write about the Snellen visual acuity chart. How it is different from LogMar visual acuity chart?

   **Or**

   Describe in detail about instrumentation and clinical procedure of indirect ophthalmoscopy

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. Write down the difference between direct and indirect ophthalmoscopy
4. Name the illumination techniques used in slit lamp. Explain any two of them
5. Explain reliability factors while interpreting a visual field

   **Or**

   Write a note on principle of anterior OCT with its clinical indications
6. Write about Badal principle. Explain about its advantages over non Badal principle
7. Write short note on various designs in pseudoisochromatic plate test
8. Write short note on confrontation technique. Explain diagramming confrontation
9. Direct Vs Indirect gonioscopy
10. What are the types of tonometers? Differentiate each based on principles

    **Or**

    Write about instrumentation and clinical procedure of pachymetry
11. Write a note on interpretation of pentacam report
12. Write about various types of amsler's chair

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Name the dye which is used in FFA. What are the benefits of using a particular dye?
14. Define visual acuity. Explain vision analyzer
15. SWAP
16. Fundus camera – clinical uses
17. Anderson's criteria
18. What is the use of a placid disc?
19. Write the origin of ERG waves?
20. State Imbert-Fick law. Name the instrument in which this principle is being utilized
21. What do you mean by fixation loss while performing perimetry? What is the accepted range in report interpretation?
22. Write about the Lens guage

# Rajiv Gandhi University of Health Sciences, Karnataka

**II year B.Sc. Optometry Degree Examination – 23-Dec-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## OPTOMETRICS OPTICS – (RS-3)
## Q.P. CODE: 3111

Your answers should be specific to the questions asked
Draw neat labeled diagrams wherever necessary

**LONG ESSAYS (Answer Any Three)** **3 x 10 = 30 Marks**

1. What is PAL? What is the difference between hard and soft progressive lens design? Write the standard method for taking progressive lens fitting measurement
2. Describe the datum and boxing system of measurement with the help of suitable diagram
3. Enlist the various types of lens material. Describe the advantages and disadvantages of each
4. Write briefly about the faults of on the material of the lens

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. Explain the types of bifocal
6. Transport the following into the alternate spherocylindrical form
   c) +0.50 DS/+1.50 DC x 160
   d) -3.25DS/ +1.75 DC x 35
7. Explain about aspheric lenses in detail
8. Describe spherical aberration. Discuss the effect of their aberration in spectacle
9. Explain advantages of plastic lenses over glass
10. Briefly explain the image jump in bifocal
11. What factor should be considered before selecting frames for children?

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. What is toric lens? Give some examples
13. State the power required to produces the following lenses in periscopic form
    a) +1.25 b) -3.75
14. What is called tool power? Explain briefly
15. High index lens
16. Facial wrap
17. Glass cement
18. Define prism diopter and state its advantages as a unit of prism measure
19. Mechanical requirement of bifocal lenses
20. Write down advantages of anti-reflection coating
21. Name different types of temples

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 23-Dec-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## OPTOMETRIC OPTICS & DISPENSING (RS-4)
## Q.P. CODE: 3346
## (QP contains two pages)

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Explain the spectacle lens manufacturing process.

2. Discuss on the patient selection and dispensing of progressive addition lenses.

   **Or**

   Use formula method to find the resultant Spherocylinder lens power when two obliquely crossed spherocylinder lenses are combined, Lens 1 : plano +2.00 DC x 60, Lens 2 : Plano –3.00 DC x 10

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. What are the tools used for repairing spectacles?

4. Write a note on hand neutralization.

5. What are the facial measurements required for dispensing a pair of glasses?

   **Or**

   Write properties of cross cylinders? With one example each.

6. Write a note on Aspherical lenses.

7. A +4.00 D spherical lens is ordered for the Right Eye. The perception also calls for 2 $\Delta$ of prism base out before the Right Eye. How should the lens be decentered to obtain the correct amount of prism?

8. What are the different tints available? Write its uses and whom to prescribed them.

9. Derive sag formula.

10. Write a note on types of bifocal lens segments.

    **Or**

    Steps for toric transposition? With one example.

11. What are the aberrations in ophthalmic lenses?

12. Explain Knapp's law.

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Welding glasses.

14. Transpose to negative sphero – cylindrical format.
    a. -4.00DC*180 / -2.00DC*90
    b. +3.75DC*60 / -2.25DC*150

15. Types of bridges.

16. Specific gravity.

17. Hydrophobic coating.

18. Fresnel lenses.

19. Mention any four frame shapes.

20. Mention the different types of coating available.

21. Vertex distance and vertex power.

22. Trivex lens.

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 26-Dec-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## Visual Optics (RS-3)
## Q.P. Code: 3112

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Answer Any Three)** **3 x 10 = 30 Marks**

1. What is Myopia? Discuss the optical principle, clinical types, features and treatment options.
2. What is Subjective refraction? Explain in detail about the different ways of Subjective refraction.
3. What is Hypermetropia? Classify clinical types, features and treatment.
4. What is accommodation? Discuss the associated anomalies of accommodation.

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. Classify types of astigmatism with examples.
6. Brief convergence and its anomalies.
7. Define range and amplitude of accommodation with example.
8. Define Presbyopia. Mention its clinical symptoms and treatment options.
9. Define Anisometropia and its treatment options.
10. Define Aphakia and its features and treatment options.
11. Write note on Cycloplegic refraction.

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. Aniseikonia.
13. Transpose the following in minus cylinder form:
    +1.00/+2.00 x 10*
    +0.50/+1.75 x 30*
14. Pin hole principle.
15. Define Pseudophakia.
16. Image formed by concave lens.
17. Define Emmetropia.
18. Convert the following in feet system: (a) 6/24 (b) 6/18.
19. Define contrast sensitivity.
20. Define AC/A ratio.
21. Define visual acuity.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 28-Dec-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## CEVS AND OPTOMETRIC INSTRUMENTS
## (REVISED SCHEME-3)
## Q.P. CODE: 3113

Your answers should be specific to the questions asked.
Draw neat labeled diagrams wherever necessary.

**LONG ESSAYS (Answer Any Three)** **3 x 30 = 30 Marks**

1. Explain in detail about the optics of retinoscope, write a note on plane mirror and concave mirror effects and its clinical uses in practice.

2. What are the various illumination techniques present in slit lamp examination, explain each with its clinical application.

3. What is Pseudoisochromatic plate test? Write in detail about the various designs available with different commercially available instruments.

4. Explain in detail about the parts of Humphrey visual filed report with a neat sample diagram of the report.

**SHORT ESSAYS (Answer Any Six)** **6 x 5 = 30 Marks**

5. What are the principles involved in keratometer? Draw a neatly labelled diagram of Bausch and Lomb keratometer optics.
6. Write a note on principle and clinical indications for gonioscopy.
7. What is ultrasonography? Write in detail about the physics involved in ultrasonography.
8. What are the indications for electrophysiology testing? What is Arden's ratio and where is it used?
9. What is fundus Biomicroscopy? Explain the classification with examples.
10. Short note on types of tonometer and how do they differ in their principles.
11. Write the differences between normalized and absolute scale in corneal topography system.

**SHORT ANSWERS** **10 x 2 = 20 Marks**

12. What are the various components of a case history?
13. List the advantages of Badal principle over non-Badal principle.
14. The various principles under which autorefractor has been designed.
15. List down the accessories of trial set.
16. What is SRK formula? Its clinical application.
17. K1:45.50D@10;K2:49.00D@100. Comment on Keratometry readings.
18. Name and write the two formulae used in construction of contrast sensitivity charts.
19. Differentiate SWAP and SITA.
20. Enlist the various phases of FFA.
21. Standards of a clinical consultation room.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 26-Dec-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## VISUAL OPTICS (RS-4)
## Q.P. CODE: 3347

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Explain the mechanism of accommodation. Write in detail about etiology, diagnosis and treatment of Presbyopia.

2. Discuss the optics involved in Hypermetropia with a neat labelled diagram. Write classification, clinical features and management of Hypermetropia.

   **OR**

   What is Retinoscopy? Elaborate on the reflex characteristics and principle. Discuss the importance of working distance lens in retinoscopy.

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. Explain about Trial set and trial set contents.
4. Discuss the clinical features of pathological myopia.
5. AC/A ratio. Explain the clinical importance.

   **OR**

   Problems encountered in retinoscopy.
6. Discuss Sturm's conoid.
7. Discuss the role of cornea and lens in ocular refraction.
8. Short note on Cycloplegic refraction.
9. Discuss the importance of accommodation in Hypermetropia.
10. Discuss the LogMAR chart.

    **OR**

    Draw the Schematic representation of reduced eye.
11. What is Anisometropia?
12. What is Fresnel prism? Write its advantages.

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Optics of neutrality in retinoscopy.
14. Near point of accommodation.
15. What is Depth of focus?
16. Write about Maddox rod.
17. Short note on Aniseikonia.
18. Fogging.
19. With the rule Astigmatism, with an example.
20. Angle Kappa.
21. Dynamic retinoscopy.
22. Calculate the amplitude of accommodation required to see an object at 10cm for + 4.00D hyperopia.

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination – 28-Dec-2022**

**Time: Three Hours** **Max. Marks: 100 Marks**

## CEVS AND OPTOMETRIC INSTRUMENTS (RS-4)

## Q.P. CODE: 3348

Your answers should be specific to the questions asked
Draw neat, labeled diagrams wherever necessary

**LONG ESSAYS (Second Question Choice)** **2 x 10 = 20 Marks**

1. Explain in detail about the parts of an orbscan report. Add a note on importance of each component of the report in clinical interpretation

2. What is HFA? Explain the reliability indices and other components of the report in detail

   **Or**

   Explain the parts of retinoscope, its principle, step by step procedure.

**SHORT ESSAYS (Question No 5 & 10 choice)** **10 x 5 = 50 Marks**

3. Write a short note on Goldman Applanation Tonometry
4. Write in detail on principle and use age of ERG
5. Explain the physics involved in ascan. What are its indications?

   **Or**

   Write short note on trial case accessories and its uses
6. Write down the principle of abberometer. Add a note on its uses
7. Write down the principle and types of pachymeter
8. What is hand neutralization? Write its procedure
9. Explain the parts of slit lamp
10. Write a note on principle and instrumentation of fundus biomicroscope

    **Or**

    Difference between direct and indirect gonioscope
11. Write the clinical procedure and interpretation of OCT
12. Explain in detail about different phases in fundus fluorescein angiography

**SHORT ANSWER** **10 x 3 = 30 Marks**

13. Optometer principle
14. Near vision charts
15. Difference between one position and two position keratometer
16. Indications of FFA
17. Potential Acuity Meter
18. Principle of direct ophthalmoscope
19. SITA
20. Purkinje images
21. Lens gauge
22. Common color vision defects

# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 30-Dec-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## MICROBIOLOGY PATHOLOGY PHARMACOLOGY
## Q.P. CODE: 3114
## SECTION A – MICROBIOLOGY AND PATHOLOGY (40 MARKS)
## (REVISED SCHEME – 3)

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

**(Note : Both QP Codes 3114 and 3115 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (Answer any Two)** **2 x 10 = 20 Marks**

1. Write in detail about Acanthamoeba Keratitis.
2. Define embolism. What are the types of Embolism? Discuss the pathogenesis of Embolism.
3. Give an account of gram positive bacteria.

**SHORT ESSAYS (Answer any Two)** **2 x 5 = 10 Marks**

4. Antigen.
5. Congenital toxoplasmosis.
6. Classify leprosy. Mention modified Ridley and Jopling classification.

**SHORT ANSWERS** **5 x 2 = 10 Marks**

7. Give an example for DNA and RNA virus.
8. **Enrichment media**
9. Macrophages.
10. Necrosis.
11. Name any two fungi causing eye infection.

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# Rajiv Gandhi University of Health Sciences, Karnataka

**II Year B.Sc. Optometry Degree Examination - 30-Dec-2022**

**Time: Three Hours** **Max. Marks: 80 Marks**

## MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY
## SECTION B: PHARMACOLOGY (40 MARKS)
## (REVISED SCHEME – 3)
## Q.P. CODE: 3115

Your answers should be specific to the questions asked.
Draw neat, labeled diagrams wherever necessary.

**(Note: Both QP Codes 3114 and 3115 are to be answered within total duration of 3 hours)**

**LONG ESSAYS (Answer Any Two)** **2 x 10 = 20 Marks**

1. What are the different routes of administration of drugs? Mention the advantages and disadvantages of the oral route of administration.
2. Discuss the use of diuretics in ocular disorders.
3. Classify the drugs used in Tuberculosis. Discuss the Tuberculocidal drugs.

**SHORT ESSAYS (Answer Any Two)** **2 x 5 = 10 Marks**

4. Special drug delivery systems
5. Different sources of drugs
6. Plasma half-life

**SHORT ANSWERS** **5 x 2 = 10 Marks**

7. Atropine
8. Teratogens
9. Fluorescein
10. Rose – Bengal
11. Vitamin 'A'

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