Rajiv Gandhi University of Health Sciences, Karnataka

II year B.Sc. Optometry Degree Examination – 29-May-2024

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 in detail about difference types of spectacle lens tints and coatings.
2. Classification of spectacle frame construction and measurement.
3. Name the common design problem of progressive addition lens. What are patient's basic visual characteristics and requirements that need to be assessed once the patient is motivated for progressive addition lens?
4. Explain the properties of crossed cylinders with help of example.

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

5. What is Fresnel prism? What are the uses of Fresnel prisms?
6. Write briefly Lenticular lenses.
7. Rotary prisms and effective prism power in near vision.
8. A – 10.00 DS lens is made up in Lenticular form using a 10mm aperture. The lens is mounted at dioptrical distance of +50.00D from the eyes center of rotation. Calculate the angular field of view.
9. Differentiate between Lenticular and aspheric lenses.
10. Name the four common difficulties while taking binocular distance PD and mention the solution for any one of them.
11. What is thickness difference of a prism? Calculate the thickness difference of 6Δ Prism made in spectacle crown glass (1.523) of R.I, 50 mm in diameter.

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

12. Define prism diopter with diagram.
13. Meniscus lens.
14. Contrast filters and gradient lenses.
15. Crutch spectacles.
16. What are the advantages of polycarbonate lenses?
17. Define glare and list the type.
18. Knapp's law.
19. What is pantoscopic tilts. What is the usual pantoscopic tilt?
20. Prentice rule.
21. Base curve.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 04-Jun-2024

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

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 are the optical principles of subjective refraction? Write in detail about the procedure involved in the monocular subjective refraction
2. Define myopia. Explain the causes, clinical types along with feature in detail
3. Define astigmatism. Write in detail about the aetiology and optical condition of astigmatism
4. a) Define Hypermetropia. Write in detail about the signs and symptoms of Hypermetropia
   b) A 14-year-old boy presenting with blurring of vision for both distance and vision along with asthenopic symptoms for a few months and was found to accept +2.00DS without fogging, +4.00DS with fogging and on cycloplegic refraction having +6.50DS. Classify hypermetropia into total, absolute, facultative and latent hypermetropia

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

5. What are the impacts of anisometropia on binocular vision?
6. Write in detail about the construction of log MAR visual acuity chart
7. What are the various methods of estimating the near addition amongst the presbyopic patients?
8. Write short note on various methods of dynamic retinoscopy
9. Short note on clinical features and management strategies for presbyopia
10. Explain axial and refractive ametropia with examples
11. Define range and amplitude of accommodation. What are the accommodative anomalies seen in clinical practice?

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

12. What is the Duochrome test? Write down the principle based on which it works
13. What is the Jack in the box phenomenon? How can we overcome the same?
14. Explain Donder's Reduced eye concept
15. Define the following terms – a) Conjugacy b) Catoptric power
16. How does ocular refraction vary from spectacle refraction?
17. List down the various methods of binocular balancing and its purpose
18. What is a clock dial chart? How is this chart used in the clinical practice?
19. Write a note on various contributing factors in the process of development of refractive error
20. What are the various types of charts available to measure contrast sensitivity?
21. Define depth of focus and depth of field

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 06-Jun-2024

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 10 = 30 Marks**

1. What is visual field and mention the different components. Describe different methods of field charting?
2. Define keratometry. Explain instrumentation theory and clinical uses of the same.
3. Write about pediatric visual acuity testing.
4. Explain instrumentation theory of binocular indirect Ophthalmoscope. Define indirect Ophthalmoscopy.

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

5. Write a short note on various principles used in corneal topography.
6. Write a short note on gonioscopy.
7. Explain stages of FFA.
8. Explain the theory of and designs of Pseudoisochromatic test plates to check color vision.
9. Name the illumination techniques used in slit lamp procedure. Explain any two of them in detail.
10. Write about intraocular pressure checking with the help of schiotz tonometers.
11. Explain about Badal and Non-Badal principle.

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

12. Explain reduced Snellen system.
13. What is Riddoch Phenomenon of visual field?
14. What is static retinoscopy?
15. Explain the meaning of 24-2 and 30-2 in Humphrey visual field testing.
16. Draw a normal A-scan graph and label it.
17. Name the places of putting electrodes in ERG procedure.
18. Clinical indications of ERG.
19. Name the accessories available with a normal trial case.
20. Why do we use green filter in slit lamp.
21. Advantages of NCT.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 10-Jun-2024

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

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

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 causes of bleeding disorders? Outline the investigations done for haemostatic function.
2. List the fungal agents encountered in fungal keratitis. Discuss the steps in laboratory diagnosis of keratitis caused by any one of them.
3. Define and classify sterilization. Add a note on moist heat method of sterilization.

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

4. Types of exudation
5. Give an account on risk factors, pathogenesis, and laboratory diagnosis of viral keratitis.
6. **What is culture media? Explain types of culture media based on functional use or application.**

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

7. Phagocytosis
8. Giant cells
9. HSV virus
10. L J Medium
11. Scar tissue

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 10-Jun-2024

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

MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY
SECTION B: PHARMACOLOGY (RS – 3) (40 MARKS)
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. Classify anti hypertensive drugs. Explain the mechanism of action and adverse effects of ACE inhibitors
2. Define general anaesthesia. Classify general anaesthetics and explain the objectives of pre-anaesthetic medication with one drug each to achieve them
3. Enumerate glaucoma. explain the drug used to treat glaucoma

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

4. Lignocaine
5. Antidiabetic drugs
6. Adrenaline-therapeutic uses and adverse effects

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

7. Transdermal route
8. Drugs used in ocular diagnosis
9. Drug tolerance
10. Diazepam
11. Eye drops

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 29-May-2024

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. Explain the specifications required while ordering a single vision, bifocals and progressive lens
2. Explain various types of frames and its parts, materials and measurements

   Or

   Give the sum of these two lenses plano – 3.25 DC x 180 and Plano – 3.25 DC x 45

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

3. Prentice rule and Fresnel prisms
4. Datum system of measurement
5. Write on Spherometer and Sag formula

   Or

   Lenticular lenses
6. Draw a neat diagram of PAL and label its parts
7. Write on cross-cylinders and give examples
8. PAL measurement
9. Write on vertex distance and its calculation method
10. Pupillometer

    Or

    A prison made from 1.66 index material is shown to deviate light 6 degree, what is its apical angle?
11. Explain Lens material defects
12. Write a note on selecting frame for children

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

13. Ptosis spectacle
14. High plus lens design
15. How can you repair a broken spectacle bridge?
16. Types of bifocals
17. Geneva lens measure
18. ARC coating
19. Measurement of monocular PD
20. Frame selection for high minus lenses
21. Benefits of scratch resistant glass lenses
22. Difference between glass and plastic photochromatic lens

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 04-Jun-2024

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 on Retinoscopy – optics, principle, types and techniques. Brief on dynamic retinoscopy
2. Write briefly on contrast sensitivity include its measurement methods and describe any one method

OR

Write on the steps of subjective retraction

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

3. Clinical features of Hypermetropia
4. Short note on phoropter
5. Short note on temporal and spatial resolution

OR

Short note on factors affecting contrast sensitivity

6. Write on presbyopia and its management
7. Spectacle magnification
8. Cycloplegic refraction
9. Measurement of convergence
10. Recognition acuity with example

OR

Resolution acuity with example

11. Astigmatism and its type
12. What is psudomyopia and brief on treatment modalities of myopia?

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

13. Bell retinoscopy and Nott retinoscopy
14. Charts used for near vision assessment
15. Principle of LogMAR chart
16. Refractive index of cornea and crystalline lens
17. Depth of focus
18. What is tonus allowance?
19. Pathological myopia
20. Jackson cross cylinder
21. Transpose + 2.75/+0.75*25
22. SRK formulae

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 06-Jun-2024

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. What is visual field and mention the different components. Describe different methods of filed charting.

2. What are the various illumination techniques present in slit lamp? Explain the optics and structures seen with each type of illumination techniques.
   OR
   Explain the optics of retinoscope. Differentiate plane mirror vs concave mirror effects.

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

3. How will you take history in a patient presented with defective vision?
4. Write a note on EOG
5. Describe the different types of ultrasonography.
   OR
   Outline the methods of examination of pupil.
6. Write short note on Orbscan quadmaps.
7. Short note on trial set.
8. Write about common color vision defects.
9. Write a note on Tanget screen visual field testing.
10. Compare direct and indirect Ophthalmoscopy.
    OR
    Write a note on posterior OCT report interpretation and its clinical procedure.
11. Non contact lenses for fundus examination.
12. Briefly explain optical principle of Lensometer.

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

13. Define Isopter.
14. Clinical indications of Aberrometry.
15. Draw a diagram of focusing keratometer target : a) Out of focus b) In focus
16. Define Lensometry.
17. What is false negative response in visual field testing?
18. What is Riddoch Phenomenon of visual field?
19. Name the pediatric visual acuity charts.
20. Write power ranges of trial case lenses.
21. What is the use of Amsler grid?
22. Define VEP.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 10-Jun-2024

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

MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY (RS-4)
Section A – MICROBIOLOGY AND PATHOLOGY (50 marks)
Q.P. CODE: 3349

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. What is sterilization? Classify it. Write a note on the autoclave.
   OR
   Give an account of the causative agent, pathogenesis, risk factors and treatments of bacterial Endopthalmitis.

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

2. Explain Acanthamoeba keratitis.
3. Describe the laboratory diagnosis of bacterial keratitis.
4. Write a note on culture media.
5. Give an account of cells of inflammation.
   OR
   Explain the details of viral conjunctivitis.
6. Discuss the pathophysiology of thrombosis.

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

7. Name the three disinfectants used in the microbiology laboratory.
8. Loa Loa
9. What are the uses of blood agar?
10. Name two inflammatory diseases of the retina.
11. What are Lepra cells?

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 10-Jun-2024

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

MICROBIOLOGY, PATHOLOGY AND 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
(Note: Both QP Codes 3349 and 3350 are to be answered within total duration of 3 hours)

LONG ESSAYS (Question No. 1 choice) **1 x 10 = 10 Marks**

1. Classify corticosteroids. Describe pharmacological effects of glucocorticoids and mineralocorticoids
   OR
   Describe multidrug regimen used in treatment of leprosy and tuberculosis

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

2. Describe role of immunomodulators and anti-inflammatory drugs in ophthalmic practice
3. Write short note on pharmacotherapy of ocular infection
4. Write a note on drug delivery system
5. Therapeutical use of ethyl alcohol
   OR
   Discuss anti-diabetic drugs
6. What are the actions of atropine on eye?

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

7. Bioavailability
8. Drug dependence
9. Ocusert
10. Wetting agents
11. In which condition rose Bengal staining is preferred over fluorescein staining and why?

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 19-Nov-2024

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. Write a note on Lenticular lenses.
2. Draw a neat labeled diagram of Boxing system.
3. **What is progressive addition lenses? Explain in brief about designs of PAL's.**
4. Use the formula method to find the resultant spherocylinderlens power when these two obliquely crossed spherocylinder lenses are combined
   -1.00DSPH/-2.0DCYLx90
   -2.50DSPH/-3.00DCYLx80

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

5. Write a short note on selecting frame for high minus.
6. Write a short note on Polarizing lenses.
7. Draw a neat labeled diagram of Frame and explain each parts of Frame.
8. Derive sag formula.
9. What is the theory of AR coating?
10. What is the prismatic effect at a point 8mm below and 3mm inwards from the optical centre of the LE lens -2.00DS -1.50DC x 90?
11. Write a short note on the forms of lenses.

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

12. Name any two lens material defect observed through transmission technique.
13. What is the reflectance of a lens material with a RI of 1.60?
14. What is a cylindrical lens?
15. What are the advantage and disadvantage of bifocal lenses?
16. What are the advantage of progressive addition lenses ?
17. Write the simple transposition and cross cylinder form of -1.00DS -1.75DC x 90.
18. What is the difference between segment height and segment depth?
19. A lens surface has a refractive power of +8.25 D. If the lens is made from material having an index of 1.74, what is the radius of curvature of the lens surface?
20. A frame is marked 50 □ 18. The lens shape is round. What is the effective diameter of the lens?
21. Give two disadvantage of Canada balsam.

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 19-Nov-2024

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

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 different types of trifocal lenses with diagram
2. Explain the properties of cross cylinders with the help of examples

   OR

   Calculate the centre thickness of plano convex lens made in spectacle crown glass (n=1.523) of power of surface + 5.00 D, diameter of lens is 50 mm and the edge thickness is 1 mm

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

3. Explain aspheric lens in details
4. Explain five troublesome reflections from spectacle lens surface with a diagram
5. Write a note on lens materials properties

   OR

   What is the relationship between apical angle and amount of deviation?

6. Explain in briefly the effective power of a prism in near vision with proper example
7. Measurement of monocular PD
8. Transpose the following into the alternate sphero cylinder form
   a) +0.50 D sph/+1.50 D cyl x 160
   b) -3.25 D sph / + 1.75 D cyl x 35
9. Derive the actual sag formula
10. write a short note on different types of plastic materials frames

    OR

    Write a short note on selecting frame for high plus
11. a spectacle prescription for the recalls for 3 prism base in and 2 prism base up. What compounded prism must be ground onto the lens surface to arrive at the desired prescription?
12. Explain steps of toric transposition with on example

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

13. Write a note on prismatic effect on plano-cylinder lens
14. Write a note on method of writing prescription
15. What are the advantages of ARC?
16. Write a note on lenticular lens
17. Write a note on hi index lens
18. Explain lens maker's formula
19. Enlist the common fault in the lens materials
20. Enlist the characteristics of tinted lens
21. What are the substance used in production of spectacle lens?
22. Write the advantages of CR-39 and polycarbonate

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 19-Nov-2024

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. Write a note on Lenticular lenses.
2. Draw a neat labeled diagram of Boxing system.
3. **What is progressive addition lenses? Explain in brief about designs of PAL's.**
4. Use the formula method to find the resultant spherocylinderlens power when these two obliquely crossed spherocylinder lenses are combined
   -1.00DSPH/-2.0DCYLx90
   -2.50DSPH/-3.00DCYLx80

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

5. Write a short note on selecting frame for high minus.
6. Write a short note on Polarizing lenses.
7. Draw a neat labeled diagram of Frame and explain each parts of Frame.
8. Derive sag formula.
9. What is the theory of AR coating?
10. What is the prismatic effect at a point 8mm below and 3mm inwards from the optical centre of the LE lens -2.00DS -1.50DC x 90?
11. Write a short note on the forms of lenses.

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

12. Name any two lens material defect observed through transmission technique.
13. What is the reflectance of a lens material with a RI of 1.60?
14. What is a cylindrical lens?
15. What are the advantage and disadvantage of bifocal lenses?
16. What are the advantage of progressive addition lenses ?
17. Write the simple transposition and cross cylinder form of -1.00DS -1.75DC x 90.
18. What is the difference between segment height and segment depth?
19. A lens surface has a refractive power of +8.25 D. If the lens is made from material having an index of 1.74, what is the radius of curvature of the lens surface?
20. A frame is marked 50 □ 18. The lens shape is round. What is the effective diameter of the lens?
21. Give two disadvantage of Canada balsam.

II Year B.Sc. Optometry Degree Examination - 21-Nov-2024

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

Visual Optics (RS-3)

Q.P. Code: 3112

Your answers should be specific to the questions asked

Rajiv Gandhi University of Health Sciences, Karnataka

Draw neat, labeled diagrams wherever necessary

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

1. Describe the various refractive errors. Mention their management options
2. Write in details about different types of retinoscopy and their procedures
3. Define sturms conoid and write about the classification and treatment of astigmatism with examples
4. Calculate the AC/A ratio for each of the following
    a) Orthophoria at 6 m and orthophoria at 40 cm
    b) 4Δ exophoria at 6 m and 12Δ exophoria at 40 cm
    c) 2Δ esophoria at 6m and 8Δ esophoria at 40 cm

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

5. Write any 5 points differentiating axial and refractive ametropia
6. Write in short about the reduced eye with diagram
7. Describe various methods used to measure convergence
8. Write a short note on contrast sensitivity charts
9. What is the interval of clear vision for an uncorrected 5.00 D myope with 10D of accommodative amplitude?
10. What is meant by fogging? What might occur is the patient is not fogged before beginning the subjective refraction?
11. Write in detail about the drugs used in Cycloplegic refraction

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

12. Define spectacle magnification and relative spectacle magnification
13. Describe the trial case and write down different accessories present in a trial case
14. Define puesdomyopia
15. What are Purkinje images
16. Write any two instruments by corneal curvature is measured
17. If an object is 33 cm from a + 10.00 lens, where is the image (what distance from the lens)?
18. What is radical retinoscopy?
19. Which combination makes up + 1.00 Jackson cross – cylinder?
20. How many minutes does the "E" on the 20/20 line of the Snellen eye chart subtend?
21. What is the range of keratometer?

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 19-Nov-2024

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

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 different types of trifocal lenses with diagram
2. Explain the properties of cross cylinders with the help of examples

   OR

   Calculate the centre thickness of plano convex lens made in spectacle crown glass (n=1.523) of power of surface + 5.00 D, diameter of lens is 50 mm and the edge thickness is 1 mm

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

3. Explain aspheric lens in details
4. Explain five troublesome reflections from spectacle lens surface with a diagram
5. Write a note on lens materials properties

   OR

   What is the relationship between apical angle and amount of deviation?

6. Explain in briefly the effective power of a prism in near vision with proper example
7. Measurement of monocular PD
8. Transpose the following into the alternate sphero cylinder form
   a) +0.50 D sph/+1.50 D cyl x 160
   b) -3.25 D sph / + 1.75 D cyl x 35
9. Derive the actual sag formula
10. write a short note on different types of plastic materials frames

    OR

    Write a short note on selecting frame for high plus
11. a spectacle prescription for the recalls for 3 prism base in and 2 prism base up. What compounded prism must be ground onto the lens surface to arrive at the desired prescription?
12. Explain steps of toric transposition with on example

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

13. Write a note on prismatic effect on plano-cylinder lens
14. Write a note on method of writing prescription
15. What are the advantages of ARC?
16. Write a note on lenticular lens
17. Write a note on hi index lens
18. Explain lens maker's formula
19. Enlist the common fault in the lens materials
20. Enlist the characteristics of tinted lens

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21. What are the substance used in production of spectacle lens?
22. Write the advantages of CR-39 and polycarbonate

II Year B.Sc. Optometry Degree Examination - 21-Nov-2024

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. What is the optical principles of subjective refraction? Write in detail about the procedure involved in the monocular subjective refraction.

2. Define hypermetropia. Explain the causes, clinical types along with features in detail.
   OR
   What is accommodation? Write the mechanism of accommodation with diagram

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

3. During a routine dilated fundus examination, what fundus changes would indicate the presence of pathological myopia?
4. Classify regular astigmatism and explain each type with an example.
5. Describe various methods of measuring accommodation in clinical practice.
   OR
   Write a short note on relative spectacle magnification.
6. Explain the optics of retinoscopy for emmetropia with the help of ray diagram.
7. Write short note on cycloplegic refraction.
8. Various types of charts available to measure contrast sensitivity and its clinical procedure.
9. Explain the properties of Gullstrand's schematic eye with the help of a diagram.
10. Write a note on various contributing factors in the process of development of refractive error.
    OR
    What is phoropter? Write the advantages of phoropter.
11. Short note on clinical features and management strategies for presbyopia.
12. What is clock dial chart? How is this chart used in the clinical practice?

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

13. A person having refraction OD: +3.00DSph/-1.00DCylx90. Draw Sturm's Conoid for this eye condition and state which type of astigmatism is present in this patient?
14. Write a note on illumination of consultation room and how does it play a role in the practice.
15. List down the various methods of binocular balancing and its purpose.
16. What is rowing ring scotoma? How do we overcome this condition in clinical practice?
17. Write any three procedures in clinical practice which involves light and dark adaptation.
18. How does ocular refraction vary from spectacle refraction?
19. What are the clinical scenarios where concave mirror effect is used in retinoscopy?
20. Write about the relation between accommodation and convergence.
21. Define the following terms: a) Catoptric power b) Visual acuity c) Spatial resolution
22. Enlist the accessories of trial set and write one use of each.

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 26-Nov-2024

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 10 = 30 Marks**

1. Define tonometry with the help of diagram explain the principle used in tonometry. Write shortly on applanation tonometry
2. What is Focimetry? Explain the optical principle of focimeter with the help of a neat labelled diagram
3. Write the principle and optics used in retinoscope. Write about clinical procedure
4. What is the difference between direct and indirect fundus biomicroscope?

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

5. Briefly write down accessories of slit lamp and its applications
6. Explain on Ishihara color test and its applications
7. Write a note on pachymetry
8. Explain the principle and procedure of four mirror gonioscopy
9. Write about log MAR and Snellen visual acuity chart
10. Describe Amsler chart. Brief on the seven types of Amsler chart
11. What is EOG? What is Arden's ratio and where is it used?

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

12. Explain the use of Arden grating
13. Application of B scan
14. Name the pediatric visual acuity charts
15. Define apostils
16. Potential acuity meter
17. Write on Koeppe Lens
18. Optical principle of direct ophthalmoscope
19. What is SWAP?
20. False negative response in visual field testing
21. Enlist various phases of FFA

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 26-Nov-2024

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 VEP. Explain the instrumentation theory of the same
2. Explain extended keratometry. Write about its clinical uses and sources of error occurred while performing keratometry

   Or

   Write in detail about construction of Log MAR chart and explain the procedure of visual acuity testing by Log Mar Chart.

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

3. Explain the indications of ERG
4. Discuss about Goldmann Applanation tonometer
5. **Write about Scheiner's disc principle and plasido disc.**
   OR
   Discuss the clinical interpretation of aberrometry
6. Write a note on color arrangement tests
7. Mention the causes of hyper fluorescence and hypo fluorescence noted on FFA
8. Difference between badal and non-badal principle
9. Write a short note on OCT
10. Illumination techniques in slit lamp

    Or

    Write about field of view and image formation of binocular indirect ophthalmoscope
11. **What is the optics involved in A SCAN? Write down its clinical uses**
12. Write a note on reliability indices while performing a single field analysis print out

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

13. Uses of fluorescein dye in optometry
14. Name the pediatric visual acuity charts
15. Mention one condition which can cause generalized depression in visual field
16. Accessories of trial set
17. What will be the effect of hypo fluorescence and hyper fluorescence in case of applanation tonometry?
18. Define apostilbs. Clinical significance of it while testing
19. Define Potential Acuity Meter
20. Define NPC and NPA
21. Why do we use pinhole?
22. Name the variable which influences the measurement of visual acuity

Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 28-Nov-2024

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. Give an account of Gram-negative bacteria.
2. Write in detail about different types of bacterial culture media.
3. Define Anemia. Classification of Anemia and Explain Iron Deficiency Anemia.

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

4. Disinfection.
5. Types of inflammation.
6. Autoclave.

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

7. Define leukaemia.
8. Name two Sexually transmitted diseases.
9. Name two infections caused by Herpes Virus.
10. Name any two Bleeding Disorder.
11. Define embolism.

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II Year B.Sc. Optometry Degree Examination – 28-Nov-2024

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. Coagulants: actions, mechanism, uses and adverse effects
2. Explain the various ocular preparations and formulations available for ophthalmic treatment
3. Define Pharmacokinetics and write brief note on the fate of the drug after administration.

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

4. Ideal properties of stains used in ocular preparations with examples.
5. Explain the physiological factors affecting the oral route of administration.
6. Adverse effects of drugs used in treatment of cardiovascular disorders.

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

7. Biguanides as anti-diabetic drugs
8. Therapeutic index
9. Diazepam as a skeletal muscle relaxant
10. Define: Agonist and Antagonist
11. Oral dose of a drug

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II Year B.Sc. Optometry Degree Examination – 28-Nov-2024

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

MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY (RS-4)
Section A – MICROBIOLOGY AND PATHOLOGY (50 marks)
Q.P. CODE: 3349

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. Give an account of gram negative bacteria
   Or
   What is leukemia? Classification and explain chronic myeloid leukemia

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

2. **Acanthamoeba Keratitis**
3. Discuss briefly TORCH complex
4. Add a note on enriched and enrichment media
5. Define sterilization. Explain hot air oven
   Or
   Give brief account of disinfection
6. Classify leprosy, mention modified Ridley and Jopling classification

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

7. Phagocytosis
8. Staphylococcus aureus
9. Abscess
10. **Nameany three viral infections of eye.**
11. Name any three fungal infections of the eye

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination – 28-Nov-2024

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. Classify non-steroidal anti-inflammatory drugs with examples. Write the uses and adverse effects of paracetamol

   Or

   Classify mydriatics with examples. Mention their ocular uses and adverse effects

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

2. Write the uses and adverse effects of glucocorticoids
3. Uses of adrenaline
4. Ophthalmic uses of local anesthetics
5. Uses and adverse effects of beta adrenergic blockers

   Or

   Routes of drug administration
6. Drugs used in conjunctivitis

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

7. Ocusert
8. Name any three drugs used in myasthenia gravis
9. What is a prodrug and give an example
10. Name any three penicillins with clinical uses
11. Name three ocular diagnostic agents

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Rajiv Gandhi University of Health Sciences, Karnataka

II Year B.Sc. Optometry Degree Examination - 28-Nov-2024

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. Give an account of Gram-negative bacteria.
2. Write in detail about different types of bacterial culture media.
3. Define Anemia. Classification of Anemia and Explain Iron Deficiency Anemia.

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

4. Disinfection.
5. Types of inflammation.
6. Autoclave.

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

7. Define leukaemia.
8. Name two Sexually transmitted diseases.
9. Name two infections caused by Herpes Virus.
10. Name any two Bleeding Disorder.
11. Define embolism.

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II Year B.Sc. Optometry Degree Examination – 28-Nov-2024

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. Coagulants: actions, mechanism, uses and adverse effects
2. Explain the various ocular preparations and formulations available for ophthalmic treatment
3. Define Pharmacokinetics and write brief note on the fate of the drug after administration.

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

4. Ideal properties of stains used in ocular preparations with examples.
5. Explain the physiological factors affecting the oral route of administration.
6. Adverse effects of drugs used in treatment of cardiovascular disorders.

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

7. Biguanides as anti-diabetic drugs
8. Therapeutic index
9. Diazepam as a skeletal muscle relaxant
10. Define: Agonist and Antagonist
11. Oral dose of a drug

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II Year B.Sc. Optometry Degree Examination – 28-Nov-2024

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

MICROBIOLOGY AND PATHOLOGY, PHARMACOLOGY (RS-4)
Section A – MICROBIOLOGY AND PATHOLOGY (50 marks)
Q.P. CODE: 3349

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. Give an account of gram negative bacteria
   Or
   What is leukemia? Classification and explain chronic myeloid leukemia

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

2. **Acanthamoeba Keratitis**
3. Discuss briefly TORCH complex
4. Add a note on enriched and enrichment media
5. Define sterilization. Explain hot air oven
   Or
   Give brief account of disinfection
6. Classify leprosy, mention modified Ridley and Jopling classification

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

7. Phagocytosis
8. Staphylococcus aureus
9. Abscess
10. **Nameany three viral infections of eye.**
11. Name any three fungal infections of the eye

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II Year B.Sc. Optometry Degree Examination – 28-Nov-2024

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. Classify non-steroidal anti-inflammatory drugs with examples. Write the uses and adverse effects of paracetamol

   Or

   Classify mydriatics with examples. Mention their ocular uses and adverse effects

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

2. Write the uses and adverse effects of glucocorticoids
3. Uses of adrenaline
4. Ophthalmic uses of local anesthetics
5. Uses and adverse effects of beta adrenergic blockers

   Or

   Routes of drug administration
6. Drugs used in conjunctivitis

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

7. Ocusert
8. Name any three drugs used in myasthenia gravis
9. What is a prodrug and give an example
10. Name any three penicillins with clinical uses
11. Name three ocular diagnostic agents

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