[LN 0818] AUGUST 2018 **Sub. Code: 2721**

B.OPTOM
(New Syllabus 2015-2016)

THIRD YEAR

PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS

Q.P. Code: 802721

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Write about the different types of bifocal its characteristics, advantages and disadvantages over each other and fitting of a bifocal lens.
2. What are the different types of tints used in dispensing and characteristic of each?
3. Draw a neat labelled diagram explaining the different parts of frame and the boxing system of frame measurement.

II. Write notes on: **(8 x 5 = 40)**

1. Types of spectacle lenses.
2. Toric transposition for the given prescription : -1.00DS/-1.50DCx180 BC : -6D.
3. Lens surfacing.
4. What is prentice rule? Calculate the prismatic effect caused by the out ward decentration by 2mm and upward by 1mm in the following prescription. -2.00DS / -0.50DC X 90.
5. Photochromatic lens.
6. Types of progressive lenses.
7. ANSI standards for single vision lenses.
8. Vertex distance.

III. Short answers on: **(10 x 3 = 30)**

1. List three faults in the lens material.
2. Optical principle of the prism and its uses.
3. Parts and type of lenticular lenses.
4. List the types of bridges in a spectacle frame.
5. What are the different form of lenses?
6. Differences between a cylinder and a spherocylinder.
7. Advantage of aspheric lenses.
8. Principle of antireflection lenses.
9. Define abbe value and its use.
10. Test for impact resistance.

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[LO 0219] FEBRUARY 2019 **Sub. Code: 2721**

B.OPTOM
(New Syllabus 2015-2016)

THIRD YEAR

PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS

Q.P. Code: 802721

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Write about the progressive lenses its advantages, types and fitting.
2. Explain the steps of lens surfacing and glazing.
3. Different types of coating in spectacle lenses.

II. Write notes on: **(8 x 5 = 40)**

1. Special purpose frames.
2. Occupational multifocal.
3. Polarizing lenses.
4. Boxing system with neat diagram.
5. Types of prism and its uses in ophthalmology.
6. Lens surface faults.
7. Chromatic aberration.
8. Types of bifocal lenses.

III. Short answers on: **(10 x 3 = 30)**

1. Types of temple.
2. Draw the image formation by a cylindrical lens.
3. Define pantascopictilt? What is the normal range of pantascopic tilt?
4. Uses of Fresnel prism.
5. List three types of off axis aberration.
6. Three difference between a glass and plastic phtochromatic lens.
7. ANSI standards for prisms.
8. Characteristic of safety eye wear.
9. Types of trifocal lens.
10. Steps of manufacturing of glass lenses.

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[LP 0819] AUGUST 2019 **Sub. Code: 2721**

B.OPTOM
(New Syllabus 2015-2016)

THIRD YEAR

PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS

Q.P. Code: 802721

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Bifocal lenses.
2. Defects during manufacturing process.
3. Size, shape and mounting of ophthalmic lenses.

II. Write notes on: **(8 x 5 = 40)**

1. Frames for special purpose.
2. Aberrations in ophthalmic lenses.
3. Vertex power and vertex distance.
4. Lenticular lenses.
5. Tinted lenses.
6. Problems encountered while dispensing spectacles.
7. Sag formula.
8. Toric transposition.

III. Short answers on: **(10 x 3 = 30)**

1. Pantoscopic tilt.
2. Pupillometer.
3. Simple transpotition.
4. ARC.
5. Glare.
6. Knapp’s law.
7. Two advantages and disadvantages of progressive lens.
8. Air blower.
9. Facial types.
10. Faults in lens material.

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[LQ 0220] FEBRUARY 2020 **Sub. Code: 2721**

B.OPTOM
(New Syllabus 2015-2016)

THIRD YEAR

PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS

Q.P. Code: 802721

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Classify frames based on its types and material.
2. Write the different types of special purpose frames and its uses.
3. Describe the steps of manual method of measuring monocular and binocular IPD.

II. Write notes on: **(8 x 5 = 40)**

1. Define vertex distance and its importance.
2. Faults of lens material.
3. Different material and its characteristic used for the manufacturing of frames.
4. Image jump in bifocals.
5. Compounding and resolving of prism.
6. Types and uses of lenticular lenses.
7. Steps in fitting a progressive lens.
8. Pupillometer.

III. Short answers on: **(10 x 3 = 30)**

1. Define distortion and name the two types of distortion seen in lenses.
2. Define refractive index and list the refractive index of CR39, Crown glass and trivex.
3. List the characteristic of a brown tint.
4. Types of bifocal lenses.
5. Factors affecting photochromatic lens.
6. What are the materials used for a manufacturing of glass?
7. Simple transposition – plano / -2.50DCX65.
8. Disadvantages of Fresnel prisms.
9. List three types of pliers commonly used in dispensing.
10. List the types of bevel in lenses.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[LR 2721] **DECEMBER 2020** **Sub. Code: 2721**
(AUGUST 2020 EXAM SESSION)

B.OPTOM
(Regulation 2015-2016)

THIRD YEAR

PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS

Q.P. Code: 802721

Time: Three Hours **Maximum: 100 Marks**

Answer all questions

I. Elaborate on: **(3 x 10 = 30)**

1. Write about special purpose of Frames.
2. Write about different types Frame Material.
3. Write in detail PAL.

II. Write notes on: **(8 x 5 = 40)**

1. Toric Lenses.
2. Temples.
3. Distometer.
4. High Index Glasses.
5. CR-39.
6. Boxing system.
7. Facial measurement of frame selection.
8. ANSI Standards.

III. Short answers on: **(10 x 3 = 30)**

1. Find the prismatic effect for near, the distance correction in +3.00DS and the PD of 66/62.
2. Air blower.
3. Splay angle.
4. Types of PAL.
5. Ghost image.
6. Refractive index.
7. Principle of prism and its uses.
8. Flint glasses.
9. Isekonic Lenses.
10. Types of Bifocals.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0122] JANUARY 2022 Sub. Code: 2721
(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)

B.OPTOM
THIRD YEAR (Regulation from 2015-2016)
PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS
Q.P. Code: 802721

Time: Three Hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. IPD Measurement.
2. Defects during manufacturing process.
3. Progressive Addition Lenses (PAL).

II. Write notes on: **(8 x 5 = 40)**

1. Tinted Lenses.
2. Polaroid lenses.
3. Photo chromatic filters.
4. Lenticular lenses.
5. Rotary prisms and effective prism power in near vision.
6. ANSI standards.
7. Special purpose frames.
8. Write about aspheric lenses.

III. Short answers on: **(10 x 3 = 30)**

1. Properties of cross cylinders.
2. Knapp’s law.
3. Pantoscopic tilt.
4. Simple transposition. +2.00D sph. / +0.75 cyl. X 90˚
5. Ghost images.
6. Distometer.
7. Fused bifocals.
8. Recumbent spectacles.
9. Abbe value.
10. Optical centre marking.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0922] SEPTEMBER 2022 Sub. Code: 2721
(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

B.OPTOM
THIRD YEAR (Regulation from 2015-2016)
PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS
Q.P. Code : 802721

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Define Presbyopia. Illustrate with diagram the characteristics of the different types of bifocals and fitting of a bifocal lens.
2. Describe the different types of coating in spectacle lenses, explaining the uses of each. What are the harmful effects of ultraviolet rays to the eyes?
3. Describe the steps of manual method of measuring monocular and binocular IPD. What are the common problems with progressive lenses?

II. Write notes on: **(8 x 5 = 40)**

1. Define vertex distance. What is the importance of measuring vertex distance?
2. Mention the disadvantages of bifocal lenses compared to progressive lenses.
3. Boxing system with neat diagram.
4. Explain the simple and Toric transposition.
5. Sag formula.
6. Types and uses of lenticular lenses.
7. Properties of cross cylinders.
8. Splay angle spectacles.

III. Short answers on: **(10 x 3 = 30)**

1. Uses of Fresnel's prisms.
2. Characteristics of safety eye wear.
3. Pantoscopic tilt.
4. Define refractive index. List the refractive index of CR39, - crown glass and Trivex.
5. What is base curve? Name a formula used to derive base curve.
6. What are the advantages of CR39 lenses?
7. Draw the image formation of a cylindrical lens.
8. Abbe number.
9. Types of trifocal lenses.
10. Describe off axis aberrations.

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THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY

[AHS 0423] **APRIL 2023** **Sub. Code: 2721**

B.OPTOM
THIRD YEAR (Regulation 2015-2016 onwards)
PAPER I – OPTOMETRIC OPTICS I & II AND DISPENSING OPTICS
Q.P. Code : 802721

Time: Three hours **Answer ALL Questions** **Maximum: 100 Marks**

I. Elaborate on: **(3 x 10 = 30)**

1. Progressive addition lenses.
2. Tinted lenses.
3. Lens surfacing.

II. Write notes on: **(8 x 5 = 40)**

1. Toric transposition.
2. Pupilometer.
3. Aspheric lenses.
4. Frame selection for high plus lenses.
5. Boxing system.
6. Facial types.
7. Protective lenses.
8. Multifocal lenses.

III. Short answers on: **(10 x 3 = 30)**

1. Lenticular lenses.
2. Approximate power.
3. Cylindrical lenses.
4. Lensometer.
5. Fresnel prism.
6. Draw and label the parts of a frame.
7. Retroscopic tilt.
8. Diamond cutter.
9. Back Vertex distance.
10. Transpose -0.75D sph/-2.75D cyl X 135.

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