

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

[AHS 0122]

**JANUARY 2022**

**Sub. Code: 2751**

**(FEBRUARY 2021 & AUGUST 2021 EXAM SESSION)**

**B.OPTOM**

**THIRD YEAR (Regulation 2018-2019)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

*Q.P. Code : 802751*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. What are progressive lenses? Discuss about various parameters required to fit progressive lenses.
2. Write in detail about mounting of ophthalmic lenses.
3. Write in detail about antireflection and UV coating in spectacle lenses.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Pupillary distance measurement.
2. ANSI standards.
3. Polaroid lenses and their benefits.
4. Frames for special purpose.
5. Pantoscopic tilt and its effect.
6. Bifocal lenses.
7. Aspheric lenses.
8. Reflecting filters.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Define refractive index and give the refractive index for CR39 and crown glass.
2. Advantages of lenticular lenses.
3. Field of view of a lens.
4. Occupational lenses.
5. Abbe value.
6. Benefits of yellow tint.
7. Different types of bevels.
8. Distometer.
9. Markings seen on progressive lenses.
10. Patient selection for progressive lenses.

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

[AHS 0922]

SEPTEMBER 2022

Sub. Code: 2751

(FEBRUARY 2022 & AUGUST 2022 EXAM SESSIONS)

**B.OPTOM**

**THIRD YEAR (Regulation from 2018-2019)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

*Q.P. Code : 802751*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write in detail about different types of coatings of spectacle lenses.
2. Write in detail about mounting of ophthalmic lenses.
3. Write in detail about frames for special purpose.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Steps in fitting progressive lenses.
2. Field of view of lenses.
3. Trifocal lenses.
4. Safety wear spectacles.
5. Brown tinted lens.
6. Chromatic aberration, abbe value and its effect.
7. Lenticular lenses.
8. Photochromatic lenses.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Types of progressive lenses.
2. Aspheric lenses.
3. Optical density.
4. Types of blocks.
5. Fitting height.
6. Benefits of antireflection coating.
7. Edger.
8. Uses of pupillometer.
9. Polaroid lenses.
10. Describe reflection with bifocals.

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

[AHS 0423]

APRIL 2023

Sub. Code: 2751

**B.OPTOM**

**THIRD YEAR (Regulation 2018-2019 onwards)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

*Q.P. Code : 802751*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. ANSI STANDARDS.
2. PAL – Progressive addition lenses.
3. Protective glasses.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Absorptive glasses.
2. Bifocals.
3. Pupilo meter.
4. Anti reflective coating.
5. Spherical aberration.
6. Photochromic filters.
7. Abbe's value.
8. Reflecting filters.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Gradient lenses.
2. Pantoscopic tilt.
3. Trifocal lenses.
4. Flint glasses.
5. High index lenses.
6. Principle of prism and its uses.
7. Ghost images.
8. Vertex distance.
9. Image jump.
10. Sphero cylinder.

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

[AHS 1123]

NOVEMBER 2023

Sub. Code: 2751

**B.OPTOM**

**THIRD YEAR (Regulation 2018-2019 onwards)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

*Q.P. Code: 802751*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write about the progressive lenses and its advantages.
2. Write the different types of special purpose frames and its uses.
3. What are the different types of tints used and characteristics of each?

**II. Write notes on:**

**(8 x 5 = 40)**

1. Photochromic filters.
2. Aspheric lenses.
3. Edge coating and Hard Multi Coating.
4. ANSI standards.
5. Safety wear.
6. Pupillometer.
7. Lenticular lens.
8. Absorptive glasses.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Advantages of Polaroid lens.
2. Advantages and disadvantages of Bifocal lens.
3. Blue light hazards.
4. Measuring Aspheric Surface.
5. Cemented Bifocal.
6. Testing procedure for Safety lenses.
7. Anti-fog coating.
8. Factors in Bifocal fitting.
9. Frame selection in Progressive lens.
10. Distometer.

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

**[AHS 0424]**

**APRIL 2024**

**Sub. Code: 2751**

**B.OPTOM**

**THIRD YEAR (Regulation 2018-2019 onwards)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

***Q.P. Code: 802751***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Describe the various types of Frame material available in India.
2. Bifocal lenses types, segment shapes and Optical characteristics.
3. Describe the steps of manual method of measuring monocular and Binocular Inter Pupillary Distance (IPD).

**II. Write notes on:**

**(8 x 5 = 40)**

1. Ghost images.
2. Distometer.
3. Types of progressive addition lenses.
4. Image jump in bifocals.
5. Frame accessories.
6. Safety lenses.
7. Polarizing filters.
8. Various coatings in Ophthalmic lenses.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Patient selection in progressive lens.
2. Brown tint Lens – What are its uses?
3. Advantages of photochromic lenses.
4. Disadvantages of bifocal lens.
5. Lenticular lens - Indications
6. Name the instrument used to measure surface power of the lens. Name any two uses.
7. Is it important to measure monocular PD? What is its significance?
8. Name three special purpose frames.
9. Why is Abbe value important while dispensing spectacles?
10. Define Glare. What are the different types Glare?

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

**[AHS 0125]**

**JANUARY 2025**

**Sub. Code: 2751**

**B. OPTOM**

**THIRD YEAR (Regulation 2018-2019 onwards)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

***Q.P. Code: 802751***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write in detail about Progressive Lenses, their advantages, types and fitting.
2. Write in detail about different types of Tints used in dispensing and characteristics of each.
3. Write in detail about Safety Wear Spectacles.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Mounting of ophthalmic lenses.
2. Field of view of lenses.
3. What are bifocals? Discuss various types of bifocals.
4. Frames for special purpose.
5. Antireflection coating.
6. Vertex distance and its effect.
7. Pupillometer.
8. Reflections from spectacle lenses.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Define abbe value. Write its uses.
2. Lenticular lenses.
3. Any three pliers commonly used in dispensing.
4. Any two recent advancement in spectacles.
5. Ghost images.
6. Advantages of edge coating.
7. Distometer.
8. Different parts of a frame.
9. Photochromatic lenses.
10. Edging.

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

**[AHS 0425]**

**APRIL 2025**

**Sub. Code: 2751**

**B. OPTOM**

**THIRD YEAR (Regulation 2018-2019 onwards)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

***Q.P. Code: 802751***

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Size, shape and mounting of Ophthalmic Lenses
2. Measure monocular and Binocular IPD with a pupillometer.
3. Frame selection depending on various face shapes.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Faults in Lens surfaces.
2. Fresnel prisms, Advantages and disadvantages.
3. Lenticular Lenses.
4. Photochromic filters.
5. Significance of Pantoscopic tilt.
6. Toric transposition.
7. Importance of Sports spectacles.
8. Types of Bifocal lens.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Why do you use Antireflecting Coating (ARC)?
2. What are the characteristics of grey and yellow tint?
3. When to apply prentice rule?
4. Splay angle.
5. Give the spherical equivalents of the following prescriptions:  
a) +1.00DS/+2.00DC x 180°                      b) -1.50DS/-3.00DC x 70°  
c) +2.00DS/+3.50 DC X150°.
6. Draw a neat diagram and label the parts of Progressive Addition Lens (PALs)
7. Vertex distance and its significance.
8. Give a pictorial representation of segment height.
9. Different form of lenses.
10. Give the refractive indices of the following:  
a) Polycarbonate                      b) Crown glass                      c) CR39.

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**THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY**

[AHS 1125]

NOVEMBER 2025

Sub. Code: 2751

**B. OPTOM**

**THIRD YEAR (Regulation 2018-2019 onwards)**

**PAPER I – OPTOMETRIC OPTICS II AND DISPENSING OPTICS**

*Q.P. Code: 802751*

**Time: Three hours**

**Answer ALL Questions**

**Maximum: 100 Marks**

**I. Elaborate on:**

**(3 x 10 = 30)**

1. Write in detail about the optics manufacturing and working principle of Polarizing Filters.
2. Write in detail about the different types of Absorptive Filters.
3. Write in detail about the ANSI standards.

**II. Write notes on:**

**(8 x 5 = 40)**

1. Optics of Executive Bifocal Lenses with neat diagram.
2. Patient Selection for Progressive Lenses.
3. Boxing system for Frame Measurement with neat diagram.
4. Differentiate between single layer ARC and Multilayer Anti-Reflection Coating.
5. Lenticular Lenses.
6. Mirror Coating.
7. Different types of Solid Trifocal Lenses.
8. Draw neat diagram about the Temporary and Permanent markings in Progressive Lenses.

**III. Short answers on:**

**(10 x 3 = 30)**

1. Bifocal Segment Height.
2. Horizontal Center Lines.
3. Neutral Density Filter.
4. Contraindications for Polarized Filter.
5. Contrast Enhancing Filter.
6. Ghost image.
7. Real Field of View.
8. Kryptok Bifocal Lens.
9. Wlech - 4 drop Lenticular.
10. Path condition in Anti-reflection coating.

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