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DISPENSING OPTICS



2nd Edition

Ajay Kumar Bhootra

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Contents

1. Introduction to Dispensing Optics **1**

- Light *2*
- Ophthalmic Lenses *2*
- Interactions of Light with Ophthalmic Lenses *5*
- Sign Conventions *6*
- Power Specification of Ophthalmic Lenses *6*
- Systems of Optical Dispensing *10*
- Applied Anthropometry and Morphology *15*
- Psychology of Dispensing *19*
- Multiple Choice Questions *22*

2. Frame Types and Frame Materials **23**

- Frame Types *23*
- Frame Materials *25*
- Metals used for Plating Metal Frames *30*
- Multiple Choice Questions *31*

3. Parts of the Spectacle Frame **32**

- Frame Fronts *32*
- Temples *35*
- Multiple Choice Questions *38*

4. Frame Selection **39**

- Frame Size *40*
- Frame Shape *42*
- Bridge of the Frame *42*
- Frame Color *44*
- Frame Design Ergonomics *44*
- Lens Prescription *46*
- Facial Shapes *47*
- Fashion, Perception and Brands *48*
- Multiple Choice Questions *49*

5. Lens Selection **51**

- Factors that Affect Ideal Lens Selection *52*
- Making an Ideal Lens Selection *54*
- Functional Classification of Lenses *60*
- Dispensing High-index Lenses *61*
- Dispensing Tinted Lenses *63*
- Dispensing Lenses for Wrap Sports Frames *65*

- Dispensing Antireflection Coated Lenses *67*
- Dispensing Aspheric Lenses *68*
- Multiple Choice Questions *71*

6. Pupillary Distance Measurements and Optical Center of Lens 72

- Digital Pupillometer *75*
- Optician's Ruler *76*
- Optical Center Placement *79*
- Multiple Choice Questions *81*

7. Multifocal Segment Height Measurements 82

- Vertical Position of Near Segment *82*
- Horizontal Position of Near Segment *83*
- Sequential Steps to Measure the Segment Height *83*
- Verifying the Position of Segment Height *85*
- Dispensing Segmented Multifocal Lenses *86*
- Multiple Choice Questions *89*

8. Dispensing in Myopia 90

- Challenges in Dispensing *90*
- Dispensing in Myopic Astigmatism *94*
- Factors that Influence Adaptation *95*
- Multiple Choice Questions *96*

9. Dispensing in Hypermetropia 97

- Challenges in Dispensing *97*
- Dispensing in Hypermetropic Astigmatism *99*
- Factors that Influence Adaptation *100*
- Multiple Choice Questions *100*

10. Dispensing in Presbyopia 102

- Lens Options *102*
- Challenges of Presbyopic Dispensing *104*
- Multiple Choice Questions *111*

11. Progressive Addition Lens Dispensing 112

- Progressive Addition Lens Reference Markings *113*
- Ideal Frame Selection *115*
- Corridor Length Selection *117*
- Fitting Cross Height *120*
- Dispensing Customized Progressive Addition Lenses *126*
- Demonstration of Use of Progressive Addition Lenses *127*
- Multiple Choice Questions *131*

12. Prism Dispensing 133

- Prism by Decentration *135*
- Worked Prisms *136*
- Compound and Resolving Prisms *137*
- Challenges Associated with Prism Dispensing *139*
- Multiple Choice Questions *139*

13. Dispensing Prescription Sunglasses 141

- Prevention *141*
- Protection *142*
- Enhancement *142*
- Tints for Sunglasses *143*
- Lens Material for Sunglasses *144*
- Lens Design for Sunglasses *144*
- Antireflection Coating for Sunglasses *145*
- Multiple Choice Questions *146*

14. Occupational Dispensing of Spectacle 147

- Three Simple Rules *150*
- Occupational Specific Gadgets *151*
- Multiple Choice Questions *154*

15. Pediatric Optical Dispensing 155

- Developmental Stages of a Child *155*
- Development of Visual System *156*
- Development of Facial Anatomy *156*
- Selecting a Suitable Frame *157*
- Selecting a Suitable Lens *159*
- Dispensing Measurements *159*
- Spectacle Frame Fitting *159*
- Parental Influence *160*
- Multiple Choice Questions *161*

16. Digital Dispensing Systems and Lens Customization 162

- Essilor's Visioffice *163*
- Nikon's IPad *164*
- Lens Customization *164*
- Multiple Choice Questions *168*

17. Lens Ordering and Verifications 169

- Lens Ordering *169*
- Lens Verifications *172*
- Multiple Choice Questions *173*

18. Lens Insertion **175**

- Lens Insertion into Zyl Frames *175*
- Lens Insertion into Supra Frames *177*
- Lens Insertion into Rimless Frames *178*
- Lens Insertion into Full Rim Metal Frames *179*
- Multiple Choice Questions *181*

19. Fitting Spectacle Frame **183**

- Pantoscopic Angle *183*
- Frontal Bow *186*
- Temple Width *188*
- Temple Bend *193*
- Nose Pads Fitting Adjustments *195*
- Standard Alignment *197*
- Spectacle Frame Fitting Assessment *199*
- Multiple Choice Questions *201*

20. Non-adaptation to Spectacles **203**

- Causes for Non-adaptation to Spectacle *204*
- Refraction *204*
- Past Habits *207*
- Frame Fitting *208*
- Dispensing *209*
- Communication *212*
- Physiological *212*
- Psychological *212*
- Environment *213*
- Limitations of Optics *213*
- Principles of Handling Patients for Intolerance to Spectacle *214*
- General Symptoms and Signs of Non-adaptation to Spectacle *215*
- Symptoms and Signs of Non-adaptation by a Presbyopic Patient *216*
- Step-by-step Procedure for Handling Patient Complaining of Non-adaptation *218*
- Patient Management *220*
- Multiple Choice Questions *221*

21. Case Studies **223**

- Tips to Handle Patient's Complaints *232*

Bibliography *235*

Index *237*

CHAPTER

3

Parts of the Spectacle Frame

There are different parts that are combined together to make a spectacle frame. Each part serves a specific function and has distinct importance. Knowing the function and application of these parts are very critical for successful dispensing of spectacle. The objective of Chapter 3 is to bring an insight on the application of different parts of the frame.

The spectacle frame has to fit comfortably to the wearer so that it can be used for a longer period of time. In order to ensure ideal fitting, the spectacle frame is adjusted from its various parts. A detail knowledge of the parts as shown in Flowchart 3.1 is very important to understand their functional importance for spectacle dispensing.

FRAME FRONTS

The part of the frame that houses the lens and allows the wearer to see through them is called frame front (Fig. 3.1).

Eyewire

The eyewire or rims are the part of the frame front that surrounds the lens. The eyewire thickness depends upon material and design of the frame. The thicker eyewire or rim of plastic frames hides the lens thickness within itself and are designed without any joints, whereas eyewire or rim forming in metal frames is designed with joints where the upper and the lower rims meet at the closing blocks and are joined together with screws.

Bridge

The bridge of the frame connects the right eyewire of the front to the left eyewire of the front. In plastic frames it is shaped to act as the bearing surface on the wearer's nose (Fig. 3.2). The width of the bridge determines the frontal angle in case of plastic frame.

There are two types of bridge that are quite common in plastic frames. They are:

- Saddle bridge
- Keyhole bridge.

The key features of ideal fit for saddle bridge are shown in Figure 3.3.

The saddle bridge is shaped like a saddle and follows the bridge of the nose smoothly.

- The base of the bridge of the plastic frame rests on the nose crest.
- The bridge width conforms to the width of the nose so that the frontal angle of pads is parallel to the sides of the nose and the total weight of the spectacle frame is distributed on the wider bearing surface both in horizontal and vertical plane of nasal flank.

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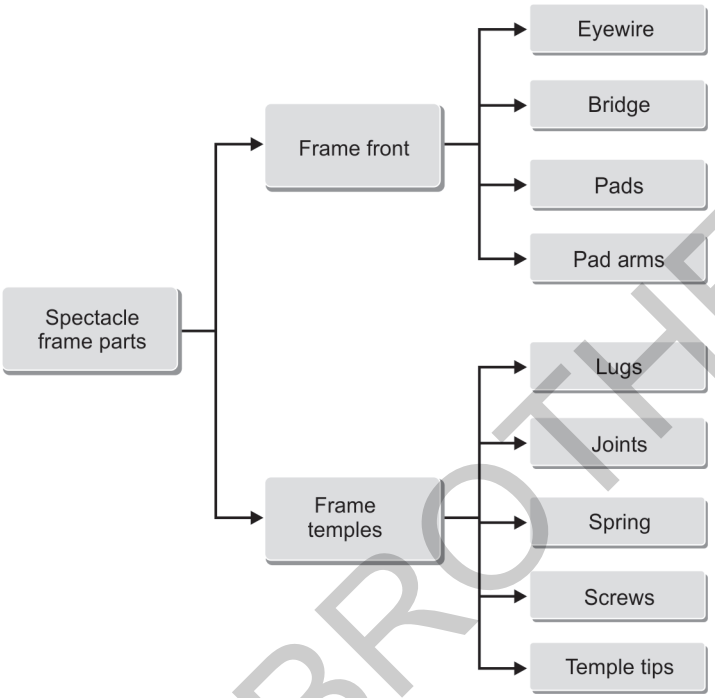
Flowchart 3.1: Parts of spectacle frames



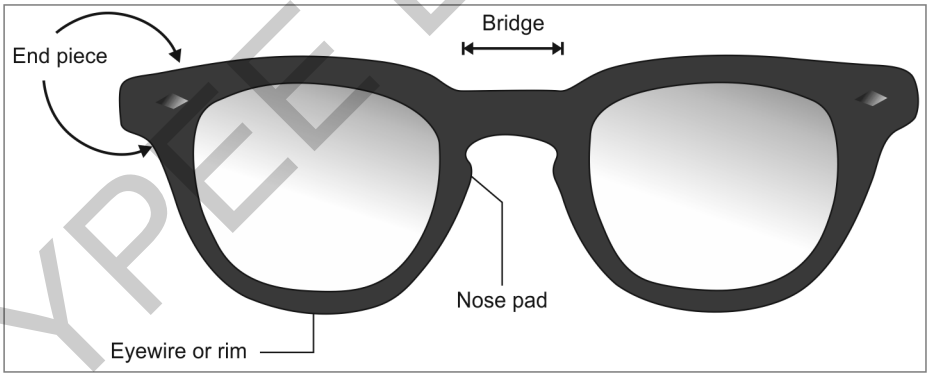


Fig. 3.1: Frame front

- Keyhole bridge makes contact only at two points on the sides of the nose as shown in Figure 3.4.

Pads

Pads or nose pads are attached to the pad arms to rest on the nose and provide cushion to bear the entire weight of the metal frame such that the metal rims of the front does not come in contact with skin. They are made of either rigid plastics or silicone material but have a metallic insert for the attachment to pad arms. There are different types of pads as shown in Figure 3.5.

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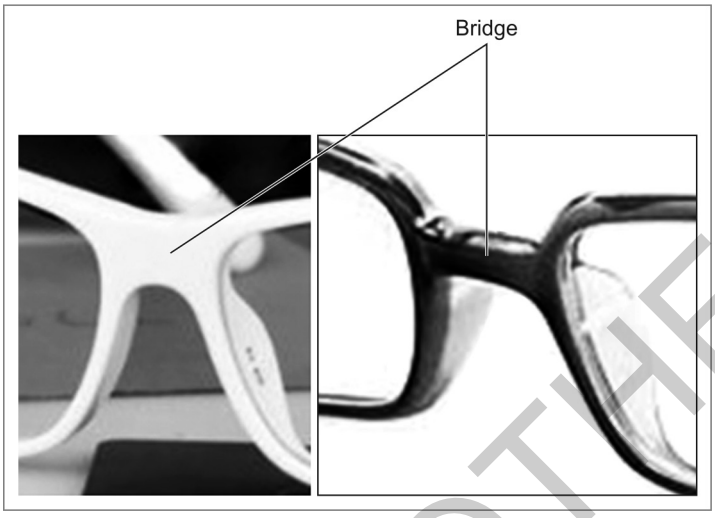

Fig. 3.2: Bridge of the frame

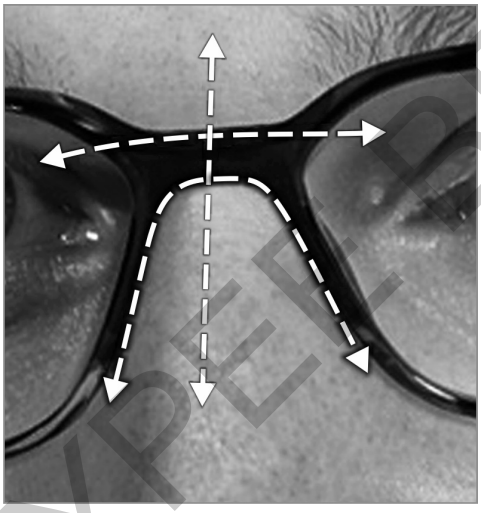

Fig. 3.3: Ideal fitting of saddle bridge



Fig. 3.4: Keyhole bridge

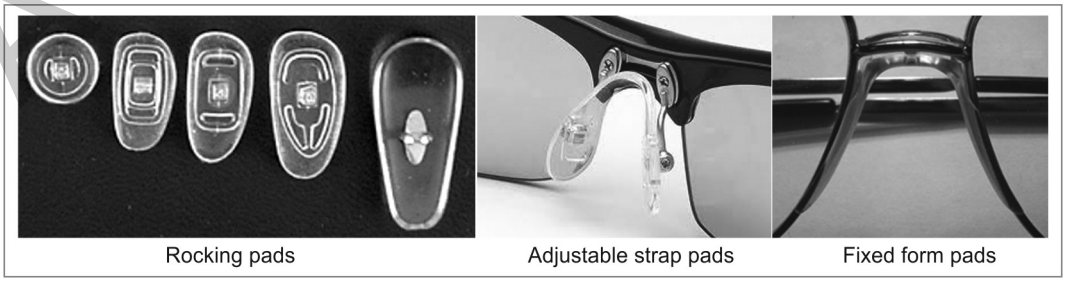

Fig. 3.5: Different types of pads

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- Rocking pads
- Adjustable strap pads
- Fixed form pads.

Fixed form pads do not allow any sort of adjustments possibility, whereas rocking pads allow to make necessary adjustments for splay angle, frontal angle and vertical angle.

Pad Arms

The two small pads are attached to the eyewire with pad arms. These pad arms are located just under the bridge on the nasal side of the eyewire and are attached with point soldering (Fig. 3.6). Pad arms allow modification for vertical angle of nose pads.

TEMPLES

Temples, also known as earpieces, arms or sides are the second most important part of the frames that extend over and/or behind the ears to hold the frame in place, preventing the frame slipping (Fig. 3.7). The temples are joined with the end piece of the front by joints A. The portion of the temple from A to B in Figure 3.7 is the thickest, portion of the temple that is the nearest attachment to the front is known as butt. The portion on the temple from C to point D where it first bends down to go over the ear at point C is called the bend. The portion BC that lies between the butt and the bend is called the shaft and the portion near the joint is referred to as end piece. While dispensing two different fitting adjustments can be done using temples—temple curve and temple bend.

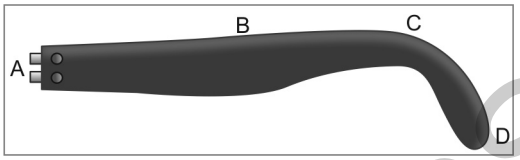

Fig. 3.7: Temple of spectacle frame

Lugs

Lugs are also known as end piece. They are extension at each end of the frame front to which the joints or sides or temples are attached (Fig. 3.8). This is the portion from where pantoscopic angle of the frame is modified.

Joints

Joints are the means of attachment for the sides with the front on which they can pivot (Fig. 3.9). All the joints are made of two pieces—one is attached to the end pieces of the front and another is attached to temples.

Spring Loaded Joints

Spring loaded joints allow outstretching of the temples to predefined extent without damaging the joints and ensuring an elastic stop (Fig. 3.10). Spring loaded joints allows the

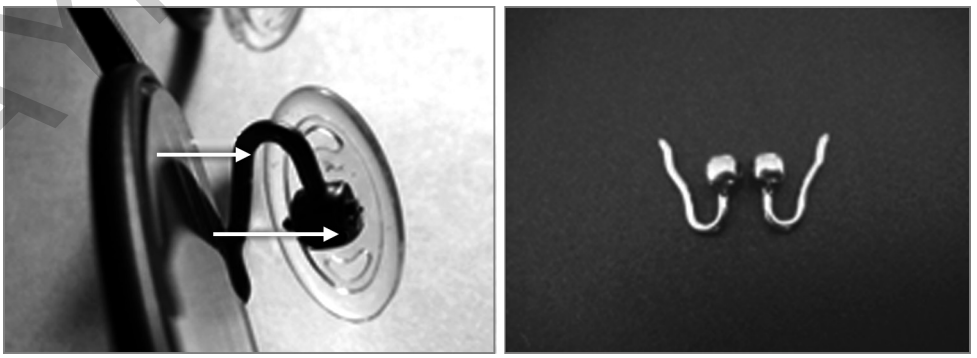

Fig. 3.6: Pad arms

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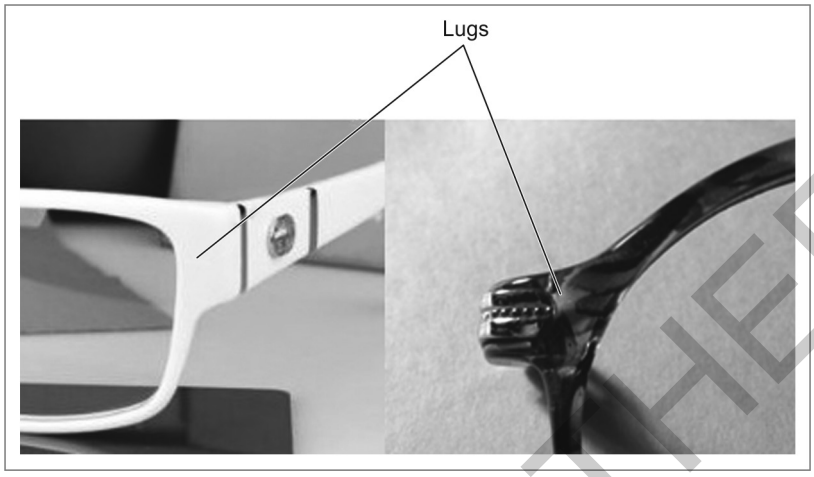

Fig. 3.8: Lugs

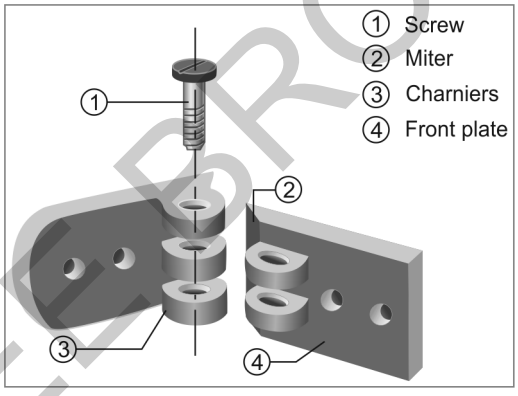

Fig. 3.9: Joints

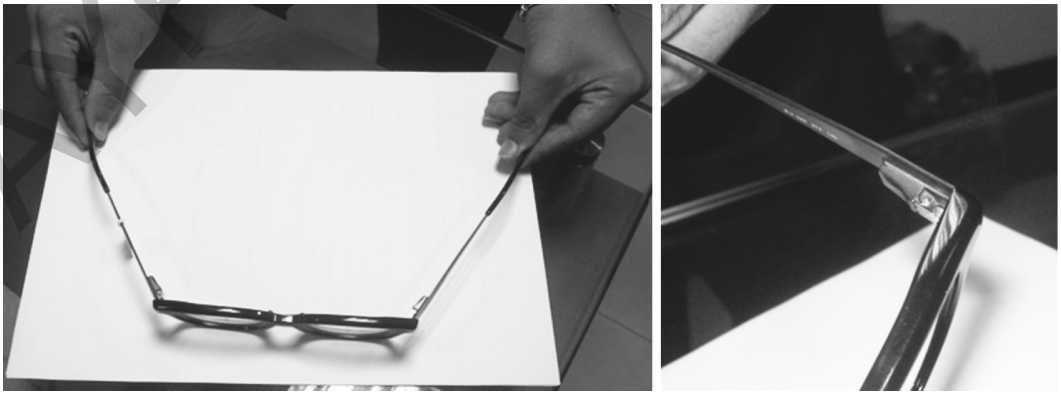

Fig. 3.10: Spring loaded joints

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temples to press against the wearer's temple head so that the frame is secured more tightly and to enable the wearer to use the spectacle frame more comfortably without slipping tendency.

Screws

Screws are the smallest part of the frames (Fig. 3.11). Some manufacturer places silicone on the screw thread and when the screw is tightened, the silicone expands between the thread of the closing block and the screws, thus ensuring good friction.

Temple Tips

Temple tips are usually removable plastic sleeves that slip over the ends of metal temples (Fig. 3.12) to provide comfort for the wearer. In case of plastic frames, the temple tip is the part of the temple that goes behind the ears.

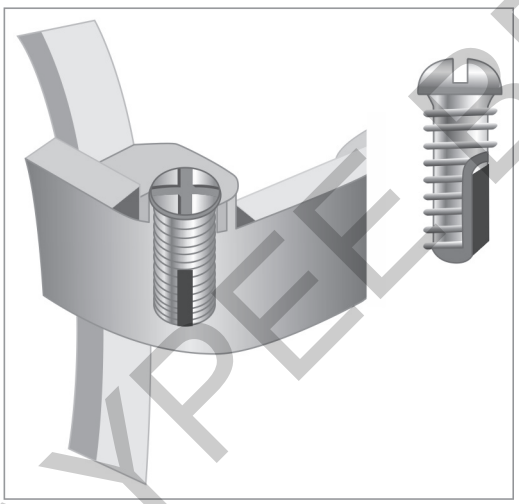

Fig. 3.11: Screws

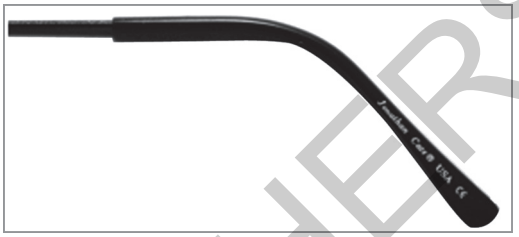

Fig. 3.12: Tips

Points to Remember

- The saddle bridge is shaped like a saddle and follows the bridge of the nose smoothly.
- Saddle bridge spreads the weight of the frame evenly over the sides and crest of the nose.
- The type of bridge that rests on the sides of the nose, but not on the crest is known as keyhole bridge.
- The type of nose pads fitted in the metal frame that does not allow any sort of adjustments possibility is known as fixed form pads.
- Removable sleeves that slip over the ends of the metal temples are known as temple tips.
- The portion of the temple that is the nearest attachment to the front is known as butt.
- The portion on the temple where it first bends down to go over the ear is called the bend.
- The portion between the butt and the bend is called the shaft.

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Multiple Choice Questions (MCQs)

1. **The main function of the pad arms is:**
   a. Its flexibility allows pads to be adjusted and rigidity allows it to remain static once it has been set in a certain position.
   b. Its flexibility allows pads to move on nose so that it does not create any marks.
   c. To ensure adaptability to nose shape.
   d. None of the above
2. **How would you define the plastic temple tips?**
   a. Removable sleeves that slip over the ends of the metal temples
   b. The hinge barrel in the temple
   c. An extra attachment to the temples near the butt as a decorative piece
   d. None of the above
3. **What is the main advantage of spring loaded joints?**
   a. To provide extra flex while putting on and off or when they are struck
   b. To provide extra comfortable fit
   c. To increase the weight and thereby frame stability on the face
   d. To provide a cosmetic look
4. **The type of bridge that follows the bridge of nose smoothly, spreading the weight of the frame uniformly over the sides and crest of the nose is known as:**
   a. Keyhole Bridge
   b. Saddle Bridge
   c. Pad Bridge
   d. Modified Saddle Bridge
5. **The type of bridge that rests on the sides of the nose, but not on the crest is known as**
   a. Keyhole Bridge
   b. Saddle Bridge
   c. Modified Saddle Bridge
   d. Pad Bridge
6. **The total weight of the glasses fitted in a metal frame is supported by**
   a. Nose Pads
   b. Pad arms
   c. Front eye wires
   d. Temple bend

Answers

1. a **2. a** **3. a** **4. b**
5. a **6. a**

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Dispensing Optics

The second edition of *Dispensing Optics* is a pragmatic resource, incorporating real life applications and situations, along with solutions to approaching them in practice.

The revised features of the book include:

- Two newly added chapters: Non-adaptation to Spectacles and Pediatric Optical Dispensing
- Problem solving multiple choice questions for students, at the end of every chapter
- Updation and elaboration of existing content.

This has been compiled with one universal objective in mind — busting the myth that Dispensing Optics, the subject, is a perplexing and dreaded one.

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