



**DNB Ophthalmology  
Question Bank  
Glaucoma  
1999-2019**



**Eye Learn**  
All about the Eye

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## GLAUCOMA



Eye Learn  
All about the Eye

1. Anatomy of angle of anterior chamber
2. Physiology of aqueous formation
3. Investigations
  - a) Tonometry
  - b) Gonioscopy
  - c) Imaging techniques
  - d) Perimetry
  - e) CCT
4. Management of glaucoma
  - a) Anti-glaucoma drugs
  - b) Laser
  - c) DLCP
  - d) Trabeculectomy
  - e) Shallow anterior chamber in first postoperative day
  - f) Suprachoroidal effusion/hemorrhage/UES
  - g) GDD
  - h) MIGS
  - i) NPGS
5. Glaucomatous damage
6. Primary glaucoma
  - a) POAG
  - b) OHT
  - c) NTG
  - d) PACG
  - e) Congenital glaucoma
7. Secondary glaucoma
  - a) PXE
  - b) PDS
  - c) NVG
  - d) Inflammatory glaucoma
  - e) Malignant glaucoma
  - f) Lens induced glaucoma
  - g) Traumatic hyphema
  - h) Angle recession glaucoma
  - i) Reverse pupillary block glaucoma
  - j) ICE
  - k) SWS
  - l) Posner-Schlossmann syndrome
  - m) Glaucoma in aphakia and pseudophakia
8. Intractable glaucoma
9. Painful blind eye
10. Studies



### ANATOMY

1. a) Ultra-structure of the trabecular meshwork.  
b) Mechanisms of aqueous formation.  
c) Physiology of aqueous humour drainage through trabecular meshwork. (4+3+3) D2018
2. a) What are mechanisms of aqueous formation? b) Detailed anatomy of trabecular meshwork and Schlemm canal c) Optical principle to see angle structures. (5+3+2) J2018
3. a) Anatomy and development of angle of anterior chamber (AC) of eye. b) Developmental anomalies of angle of AC. [(4+3)+3] J2017
4. Anatomy and embryology of the angle of the anterior chamber with diagram. Classify mechanism of primary angle closure with help of diagrams. (5+5) Apr 2016
5. Draw a diagram of angle of anterior chamber. Discuss the grading and various methods of gonioscopy. (4+3+3) D2013
6. Draw a labeled diagram of the angle structures. Specify the grading by Spaeth's method and RP center method for gonioscopy. (6+2+2 4+6) J2011
7. Describe anatomy of angle of anterior chamber of eye with diagram. D2009, J2009
8. Describe the gross and micro-anatomy of angle of anterior chamber and development of structures framing angle of anterior chamber. (2008)

### PHYSIOLOGY

9. a) Blood Aqueous Barrier and Blood Brain Barrier. b) Clinical implications of both of these barriers. (6+4) D2019
10. a) Production and outflow of aqueous humour. b) Relationship between central corneal thickness and IOP measurement. c) The accepted norm for the adjustment of corneal thickness variations to IOP measurement. (3+4+3) D2016
11. a) Aqueous humour dynamics. b) Vascular endothelial growth factors (5+5) J2016
12. a) Production, circulation and drainage of aqueous humour. b) Describe components of blood ocular barrier and its clinical importance. J2014
13. Discuss formation and drainage of aqueous humour. (10) D2011
14. Physiology of aqueous humor production. J2010

### INVESTIGATIONS

#### TONOMETRY

15. a) Principle of Goldmann Applanation Tonometry. b) Corneal Hysteresis. 5+5 D2019
16. a) Describe different types of tonometry. What is dynamic contour Tonometry? b) Discuss the sources of error in applanation tonometry c) What Is the importance of scanning laser Polarimetry glaucoma? 5+3+2 D2019 (GUWAHATI)
17. Principles, technique, advantages and possible sources of error in performing Goldmann's applanation tonometry. (2+2+3+3) J2018
18. Principles of Goldmann applanation tonometry. D2009
19. Principle of non-contact tonometry. (2005,2003,2001)
20. Dynamic contour tonometer (2005)

#### GONIOSCOPY

21. Give various methods of grading of anterior chamber angle. Discuss principle of gonioscopy and various types of gonioscopes. What are the other modalities to see anterior chamber angle? (3+4+3) D2014
22. Principles & types of gonioscopes. (2008)
23. Types of Goniolens. What role it has in diagnosis and Management of type of glaucoma. (2005)

#### NEWER IMAGING TECHNIQUES

24. Newer imaging techniques in open angle glaucoma. (10) 2012
25. Describe modern methods for the diagnosis and management of primary open angle glaucoma. (2009)
26. Confocal laser ophthalmoscopy. (1999)

#### PERIMETRY

27. Criteria for early glaucomatous visual field changes (10) 2018
28. Give various perimetric criteria for the diagnosis of early glaucoma. (10) D2015
29. Define open angle glaucoma suspect. Discuss the management options and follow up. What are the Global Indices in automated perimetry? (2+4+4) D2013



30. Write about diagnostic features of glaucomatous field defect on automated perimetry (30-2). (10) J2013
31. Give important points while analyzing given visual field for glaucoma and its limitations. D2010
32. Automated perimetry in glaucoma- types and their comparisons. (2006)
33. Pre-perimetric glaucoma diagnosis. (2005)
34. Describe the technique, interpretations and recent advances in Automated perimetry. (2001)
35. Field changes in open angle glaucoma. (2000)

### CCT

36. Describe the different modalities of measurement of corneal thickness and role of corneal thickness in glaucoma. J2012,2005
37. Define pachymetry? What are various ways of doing it. Describe the advantages and disadvantages of each method. (2008)
38. Optical principles of Pachymeter. Types and uses in ophthalmic practice. (2005)

## MANAGEMENT OF GLAUCOMA

### DRUGS

39. a) Classify pharmacological agents available to treat glaucoma.  
b) Mechanism of action of topical agents.  
c) Adverse effects and contraindications of systemic agents. (4+3+3) J2019, 2000
40. Anti-metabolites in glaucoma filtration surgery: Agents, doses and mode of delivery. (3+3+4) D2016
41. Pharmacokinetics of topical anti glaucoma drugs. (10) Apr 2016
42. List the various prostaglandin analogues available in the management of glaucoma. Give their mechanism of action, dose schedule and side effects. D2012,2008
43. Dynamics and Pharmacological Modulation of Uveo-Scleral Outflow. (2007)
44. Concept of Neuroprotection in Glaucoma. (2005, 2003)
45. Role of newer drugs in management of glaucoma, and their benefit over conventional drugs. (2003)
46. Discuss the role of Beta-blockers in glaucoma. (1999)

### LASER

47. What are the basics of selective laser trabeculoplasty? (5) D2019(GUWAHATI)
48. Different lasers used in treatment of various subtypes of glaucoma. (10) Apr 2016
49. a) Mechanism of action, technique and complications of selective laser trabeculoplasty. b) What are its advantages over Argon Laser trabeculoplasty? [(2+3+3) +2] Apr 2016 ,2008
50. Describe the indications, technique and complications of laser peripheral iridoplasty and laser peripheral iridotomy. J2014
51. Define LASER. Discuss its effects in ocular tissues and how is it useful in treating glaucomas. (2+ 4+4) D2013

### DLCP

52. Describe diode laser cyclophotocoagulation. D2009

### TRABECULECTOMY

53. Evaluation and management during failure of filtration surgery in glaucoma. What are the indications of antimetabolite in this surgery? (4+4+2) D2018
54. What is safe application of antimetabolites in trabeculectomy? Describe refinements in trabeculectomy which minimize hypotony and overfiltration of bleb. (3+7) Apr 2016
55. What are the factors related to success or failure of glaucoma filtering surgery? Also give indications of anti-metabolites. (4+6) J2011
56. Write down the common post-operative complication of trabeculectomy and how to manage it. D2010
57. Modifications on Trabeculectomy. (2005)
58. Role of Releasable Sutures. (2007)

### SHALLOW ANTERIOR CHAMBER ON FIRST POSTOPERATIVE DAY

59. A patient with chronic angle closure glaucoma undergoes a trabeculectomy and has a shallow anterior chamber on the first postoperative day. Describe the process by which you would discern the cause of postoperative anterior chamber shallowing and how you would manage this situation. (5+5) J2019
60. a) Etiopathogenesis of flat anterior chamber after glaucoma surgery. b) How would you critically evaluate and manage such a case? (5+5) J2017



61. Diagnosis and management of a case of shallow anterior chamber on the first postoperative day following trabeculectomy. (5+5) J2015
62. Discuss the differential diagnosis and management of shallow anterior chamber in first postoperative day after trabeculectomy. J2012

### **SUPRACHOROIDAL EFFUSION /HEMORRAHAGE /UES**

63. a) Causes and management of supra choroidal hemorrhage. b) Complications and management of posterior dislocation of IOL (5+5) D2019(GUWAHATI)
64. What are the predisposing factors, per-operative signs and management of a case of suprachoroidal hemorrhage during an intraocular surgery? (3+3+4) D2018

### **GDD**

65. What are the latest glaucoma drainage devices? Write their advantages and disadvantages. (5) D2019 (GUWAHATI) 2007,2005,2003,1999
66. a) Enumerate various implant drainage devices in glaucoma surgery.  
b) Indications and adverse effects of Ahmed Glaucoma Valve surgery. (4+6) J2019
67. Indications, procedure and complications of glaucoma drainage devices. (3+3+4) D2017
68. Types, indications, advantages and complications of glaucoma drainage devices. (2+2+3+3) J2015
69. What are glaucoma drainage devices available? What is their mechanism of action? What are the complications following surgery? What is their role in glaucoma management as compared to conventional modulated trabeculectomy? J2014
70. What are artificial drainage shunts? Write briefly about various drainage devices. Give indications and complications of these devices. D2012
71. Ahmed glaucoma valve. D2009

### **MIGS**

72. Enumerate and describe MIGS (Microinvasive Glaucoma Surgery) procedures. List its advantages and disadvantages in eyes with Asian ethnicity. (5+5) Apr 2016

### **NPGS**

73. NPGS in glaucoma- steps of surgery, indications and limitations. (2008)

### **GLAUCOMATOUS DAMAGE**

74. What is advanced glaucoma? Give pathogenesis of glaucomatous ocular damage. How will you follow up a case of advanced glaucoma? What are the various treatment options? (2+2+2+4) D2014
75. Describe various concepts that explain the pathogenesis of glaucomatous ocular damage J2014
76. Discuss the causes of unilateral cupping of disc. D2012
77. Pathology of GOA (2005)

### **PRIMARY GLAUCOMA**

#### **POAG**

78. What are the minimum criteria for Primary Open Angle Glaucoma (POAG)? Give severity classification of POAG with concept of target pressure. (3+7)2013
79. What are the minimum diagnostic criteria for Primary Open Angle Glaucoma (POAG)? Give severity classification of POAG with concept of target pressure? D2012, 2005, 2001
80. Disc changes in open angle glaucoma. D2009
81. Describe modern methods for the diagnosis and management of primary open angle glaucoma. JUN 2009
82. Risk Factors for Open Angle Glaucoma. (2007)
83. Medical vs surgical management of open angle glaucoma. (2002)

#### **OHT**

84. a) Define ocular hypertension. b) Investigations and management of a case of ocular hypertension. [2+ (4+4)] J2015

#### **NTG**

85. Discuss clinical features, pathogenesis and management of normal tension glaucoma. (3+3+4) D2011, 1999



86. a) What is normal tension glaucoma? b) Etiopathogenesis, clinical characteristics and management of a case of normal tension glaucoma. (2+8) J2016

### **PACG**

87. What are the clinical features of various stages of primary angle closure glaucoma? How will you manage a case of acute angle closure 10 October 2017 FAT
88. Discuss etiopathogenesis, diagnosis and management of acute angle closure glaucoma. J2012
89. AIGS classification and the management strategy for primary angle closure glaucoma in a systemic manner. (4+6) J2011
90. Write down modern classification of angle closure glaucoma and its relevance. D2010
91. Management of acute attack of angle closure glaucoma. D2009, 1999
92. Pathophysiology of primary angle closure glaucoma. D2009

### **CONGENITAL GALUCOMA**

93. What is Buphthalmos? How will you evaluate and treat a case of Buphthalmos? (2+4+4) D2019 (GUWAHATI)
94. Genetics, Pathophysiology, differential diagnosis and management of primary congenital glaucoma. (2+2+3+3) D2014
95. Discuss clinical features, pathogenesis, differential diagnosis and management primary congenital glaucoma. J2012
96. Discuss in detail about congenital glaucoma- clinical features and management options. (5+5) D2011
97. Write down the clinical picture and management of congenital glaucoma. J2009

### **SECONDARY GLAUCOMA**

#### **PXE**

98. a) Etiopathogenesis, clinical features and diagnosis of pseudoexfoliative glaucoma b) Give specific features of true exfoliation in eye (3+3+2+2) J2018, 2007,2004

#### **PIGMENT DISPERSION SYNDROME**

99. Describe the clinical features, evaluation, differential diagnosis and management of Pigment Dispersion Syndrome. (2+2+3+3) D2019
- 100.a) Pathogenesis and differential diagnosis pigment dispersion syndrome. b) Evaluation and management of pigment dispersion syndrome. (5+5) D2018, 2005

#### **NVG**

101. Causes and management of neovascular glaucoma. (5+5) D2017
102. How will you diagnose, treat and manage complications of a case of neovascular glaucoma? (2+4+4) J2016
103. Pathogenesis, causes, presentation and management of neovascular glaucoma. (2+2+3+3) J2015
104. Describe etiopathogenesis, clinical features and treatment of neovascular glaucoma. J2014
105. Discuss the investigations and management of a 55-year-old diabetic patient presenting with neovascular glaucoma and cataract with visual acuity 3/60 and IOP of 46 mm of hg. J2012
106. Management of neovascular glaucoma. D2010, 2000
107. Management of a case with florid neovascularization of the iris, dense cataract, IOP=42 mm hg, visual acuity 3/60 and proliferative diabetic retinopathy. J2010

#### **INFLAMMATORY GLAUCOMA**

108. How will you diagnose and classify a case of inflammatory glaucoma? What are the treatment options available? [(3+2) +5] D2015

#### **MALIGNANT /LENS INDUCED GLAUCOMA**

- 109.a) Discuss etiopathogenesis, evaluation and management of malignant glaucoma. B) What is lens induced glaucoma its types and management. 5+5 D2019 (GUWAHATI), 2006
110. Lens induced glaucoma-types, diagnosis and principles of management. (2006) (2003)

#### **TRAUMA**

111. Causes and management of glaucoma associated with ocular trauma. (3+7) J2017, 2002

#### **TRAUMATIC HYPHEMA**



112. Evaluation and management of near total hyphema in a 10-year-old boy post injury with a ball presenting to you on the 2nd day. (5+5) D2016
113. Causes, investigations and management of hyphema. (3+3+4) A2016
114. Grading, investigations, complications and management of traumatic hyphema. (2+2+2+4) D2014
115. What is the treatment algorithm for hyphema indicating the role of hospitalization, medical treatment and surgery? (4+6) J2011
116. Management of traumatic hyphema with secondary glaucoma. D2009
117. Medical management of traumatic hyphema. Mention the indications of surgical intervention? J2009
118. Blood staining of the cornea. (2001)

#### **ANGLE RECESSION GLAUCOMA**

119. Pathogenesis, diagnosis and management of a case of angle recession glaucoma. (2+4+4) J2016

#### **REVERSE PUPILLARY BLOCK GLAUCOMA**

120. What is "Reverse pupillary block glaucoma"? Give the clinical appearance, investigations and management of this glaucoma. D2012

#### **ICE**

121. What is iridocorneal endothelial syndrome? Explain the basis of its diagnosis and management [3+(4+3)] D2019(GUWAHATI)
122. Define and enumerate the iridocorneal endothelial syndromes (ICE). Describe their salient features and management. (5+5) D2014

#### **STURGE WEBER SYNDROME**

123. What is Sturge-Weber syndrome? Give its classification, clinical signs, investigations and principles of management of associated glaucoma. [2+(2+3+1+2)] D2014

#### **POSNER-SCHLOSSMANN SYNDROME**

124. Posner-Schlossmann Syndrome (Glaucomato-cyclitic crisis). (2005)

#### **GLAUCOMA IN APHAKIA/PSEUDOPHAKIA**

125. Glaucoma in aphakia. (2002)
126. Pseudophakic glaucoma. (2001)

#### **INTRACTABLE GLAUCOMA/ PAINFUL BLIND EYE**

127. A) Describe newly available modalities for imaging of the anterior segment? b) Management of a painful blind eye with medically uncontrollable intraocular pressure of 50 mm Hg. (5+5) J2019,2003
128. Management of intractable glaucoma or multiple failed glaucoma surgeries. (10) J2017

#### **STUDIES**

129. Outline the goals of Advanced Glaucoma Intervention Study (AGIS) and briefly discuss its findings. 10J201