



**DNB Ophthalmology
Question Bank
Topic-Wise
1999-2019**



Eye Learn

All about the Eye

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I. OCULOPLASTY

A) EYELIDS

1. Eyelid and its anomalies
2. Eyelid tumor
 - a) BCC
 - b) SCC
 - c) Meibomian gland carcinoma
3. Blepharitis
4. Ptosis
 - a) Congenital ptosis
 - b) Acquired ptosis
 - c) Myasthenia gravis
 - d) BPES
 - e) Horner syndrome
5. Lid retraction
6. Entropion
 - a) Senile entropion
 - b) Cicatricial entropion
7. Lagophthalmos & paralytic ectropion
8. Lid reconstruction
9. Tarsorrhaphy

B) LACRIMAL DRAINAGE SYSTEM

1. Lacrimal gland anatomy
2. Epiphora
3. Congenital nasolacrimal duct obstruction
4. Lacrimal gland carcinoma
5. DCT/DCR

C) ORBIT

1. ANATOMY
 - a) Orbital spaces
 - b) Walls of orbit
 - c) Cavernous sinus
 - d) SOF
2. INVESTIGATIONS
 - a) Biopsy
 - b) CT/MRI
 - c) Impression cytology
3. Proptosis
4. OID
5. TED
6. Dermoid cyst
7. Orbitotomy
8. Blow out fracture
9. Anophthalmic/ contracted socket
10. Exenteration
11. Orbital implants
12. Botulinum toxin



A) EYELIDS

EYELID AND ITS ANOMALIES

1. a) Congenital anomalies of the lids. b) What is the physiological basis of dacryolithiasis c) Anatomical abnormalities in congenital dacryocoele. (5+3+2) D2019 (GUWAHATI)
2. a) Anatomical structure of upper eyelid b) Its blood supply, venous drainage and lymphatic supply (5+3+2) J2018
3. a) Anatomy of eyelid and its blood supply b) Anatomy of LPS and its clinical importance (5+5) D2017
4. a) Anatomy and development of eyelids. b) Enumerate four congenital anomalies of eyelids. [(4+4) +2] D2016
5. Draw a labeled diagram of the vertical section of eye lid. Describe anatomy of levator palpebrae superioris. (4+6) D2011
6. Lid colobomata. Outline the principles of repair of lid colobomata. Illustrate with diagram. (2006) (1999)
7. Cryptophthalmos. (2000)

EYELID TUMOR

8. A 50-year-old HIV positive patient develops a red colored swelling over the lid. What is the most likely lesion and what can be the differential diagnosis? (5) D2019 GUWAHATI)
9. A 60-year-old patient presents with nodulo-ulcerative lesion involving central lower lid. Discuss differential diagnosis, evaluation and management of such a case. (2+3+5) D2018
10. A 65-year-old lady presents with progressively increasing upper lid mass (15mm x 10mm). Discuss differential diagnosis and management. (4+6) 2017
11. a) Enumerate malignant tumors of eyelid. b) Clinical presentations and histopathology of sebaceous cell carcinoma. c) Outline the management strategy for 20mm sized sebaceous cell carcinoma of upper eyelid. (2+5+3) J2016
12. Discuss clinical features, differential diagnosis and management of lid tumor. (3+3+4) J2013
13. Differential diagnosis of malignant lid tumours. J2009

BCC

14. Management of a basal cell carcinoma 5mm in diameter, located in the center of lower lid margin. (10) D2015
15. Describe clinical manifestations, pathology, differential diagnosis and management of ocular basal cell carcinoma. (2+2+2+4) D2011

SCC

16. Describe clinical manifestations, pathology, differential diagnosis and management of squamous cell carcinoma. J2012

MEIBOMIAN GLAND CARCINOMA

17. Clinical features, pathological features and treatment of meibomian gland carcinoma. (3+3+4) J2011

BLEPHARITIS

18. Pathogenesis, diagnosis, differential diagnosis and management of chronic blepharitis. (2+2+2+4) J2015
19. Classify chronic blepharitis. Describe its clinical features, etiology and treatment. J2014

PTOSIS

20. a) Complications and management of ptosis surgery b) What is the treatment of keratoconus? 5+5 D2019 (GUWAHATI)

CONGENITAL PTOSIS

21. Describe the clinical features, evaluation, syndromic association and management of congenital ptosis. (2+2+2+4) D2019
22. A 6-year-old child is brought to the OPD by her parents with complaints of drooping of the left upper lid noticed three years ago. How would you evaluate this patient and decide on your course of management? (5+5) J2019
23. Basic guidelines and management of ptosis in a 3-year-old child. (4+6)2017
24. What is congenital ptosis? Describe the evaluation of ptosis and the management of congenital ptosis. D2013
25. Indications and methods for frontalis sling surgery in ptosis. (10) J2011

ACQUIRED PTOSIS

26. Causes and management of a case of acquired ptosis. (5+5) J2015

MARCUS GUNN

27. Etiopathogenesis, clinical features and management of unilateral ptosis with Marcus Gunn phenomenon. (3+4+3) D2017
28. Diagnosis and management of a case of unilateral ptosis with Jaw-winking phenomenon. (5+5) 2016

MYESTHENIA GRAVIS

29. a) Clinical features and diagnostic tests of ocular myasthenia gravis b) Important differential diagnosis and points to differentiate (6+4) J2018
30. Etiology, types, clinical picture, differential diagnosis and management of myasthenia gravis. (2+1+2+2+3) J2016

BPES

31. What are the components of Blepharophimosis syndrome? Outline various principles in the complete management of this syndrome. (3+7) D2015
32. Describe clinical features and principles of management of Blepharophimosis Syndrome J2014

HORNER SYNDROME

33. Etiology, clinical features, diagnosis and differential diagnosis of Horner's Syndrome. (3+2+3+2) D2017
34. What is Homer's syndrome? Discuss clinical features, diagnosis and management of this syndrome. (1+ 3+3+3) J2013

LID RETRACTION

35. Causes, evaluation and management of eyelid retraction. (3+3+4) D2018

ENTROPION

SENILE ENTROPION

36. Etiopathogenesis and management modalities of senile entropion. (4+6) D2017
37. Classification and management of various subtypes of entropion. (5+5) D2016
38. a) Clinical assessment of entropion. b) Surgical options in involuntional entropion. (5+5) APR 2016
39. Preoperative assessment of a case of entropion and discuss 3 surgical options of correction of involuntional entropion. (3+7) D2014
40. Describe the mechanism, causes, presentation and management of senile ectropion. 2+2+ 2+ 4 D2013
41. Discuss the pre-operative assessment of entropion. Briefly discuss the surgical options for the correction of involuntional entropion. D2012

CICATRICAL ENTROPION

42. a) What are the causes of cicatricial entropion? b) Common techniques for correction of trachomatous upper lid entropion. (3+7) J2017

ECTROPION

43. a) Pathogenesis of senile ectropion b) Elucidate tests for assessment & management of senile ectropion. (5+5) J2018
44. Draw a labelled diagram of cut section of lid in relation to involuntional ectropion. Describe etiopathogenesis, clinical features, diagnosis and surgical management of involuntional ectropion. J2012

LAGOPHTHALMOS & PARALYTIC ECTROPION

45. a) A 50-year-old HIV positive patient develops a red colored swelling over the lid. What is the most likely lesion and what can be the differential diagnosis? b) What is epiphora and what are its mechanisms? c) -Name the permanent treatment options -of paralytic ectropion. 5+3+2 D2019 (GUWAHATI)
46. Enumerate the various ocular manifestations of Hansen's disease. Discuss management of Lagophthalmos. (4+6) J2019
47. Causes, evaluation and management of lagophthalmos. (3+3+4) D2017
48. Classify ectropion and describe management of paralytic lagophthalmos. (2+8) D2011

LID RECONSTRUCTION

49. a) Describe techniques for repair of a canalicular injury. b) Describe types of Orbital Implants and their advantages. (5+5) J2019
50. Principles and techniques of lid reconstruction. (3+7) J2017
51. a) What are the principles of lid reconstruction? b) Indications, technique and complications of Cutler Beard operation. (5+5) J2016
52. Describe basic principles and important techniques of lid reconstruction. (3+7) D2011
53. Indications and procedure of paramedian tarsorrhaphy. (2003)



B) LACRIMAL DRAINAGE SYSTEM

LACRIMAL GLAND ANATOMY

54. a) Anatomy and development of lacrimal drainage system b) Developmental anomalies of lacrimal passages. [(4+3) +3] D2017
55. a) Lacrimal pump mechanism. b) Clinical evaluation and investigations of epiphora. (5+5) APR2016
56. What is physiological lacrimal pump? Describe clinical evaluation in a case epiphora. (2+8) D2014
57. Draw cross section labelled diagram of lacrimal sac showing relationship of orbicularis oculi muscle to sac. Discuss lacrimal pump. J2012
58. Discuss the Lacrimal drainage physiology. (2005)

EPIPHORA

59. What is epiphora and what are its mechanisms? (2) D2019(GUWAHATI)
60. Etiology, clinical features and management of a case of pediatric epiphora. (2+4+4). June 2017
61. Clinical picture and management of congenital epiphora. Indication for surgical intervention. J2009

NLDO

62. Management of congenital nasolacrimal duct obstruction in a two-year-old child. How would the management differ in a 10-year-old? (6+4) APR2016
63. Describe the etiology, clinical features, differential diagnosis and Management of congenital nasolacrimal duct obstruction. J2014
64. What are the common causes of acquired nasolacrimal duct obstruction? Describe modalities of treatment. (2006)
65. a) Neural pathway for tear secretion by lacrimal gland.
b) Test for evaluation of tear film.
c) Etiopathogenesis of Sjogren syndrome 3+4+3 D2018
66. Management of chronic dacryocystitis. (2000)

LACRIMAL GLAND CARCINOMA

67. Clinical features, differential diagnosis and management of lacrimal gland tumours. 3+3+4 D2019 (GUWAHATI), 2008
68. Symptoms, signs, differential diagnosis and management of lacrimal gland swellings. (2+2+3+3) D2016
69. Describe the clinical features and management of lacrimal gland tumor. (5+5) D2014
70. Describe clinical features, investigations, histopathology and management of pleomorphic adenoma of lacrimal gland. (3+2+3+2) D2011

DCR

71. A 40-yr-old male underwent DCR 1 month back complains of watering. List out causes & Routine for management in such case. 10 October 2017 FAT
72. a) Anatomy of the lacrimal sac with the help of diagram(s). b) What are different types of DCR surgeries and their advantages and disadvantages? [3+(2+2+3)] D2015
73. Describe relevant nasal anatomy in relation to endonasal DCR. Give advantages and disadvantages of endonasal DCR versus external DCR. J2012
74. Describe causes of failed dacryocystorhinostomy. How will you manage such a case? (4+6) D2011
75. Causes of failure of dacryocystorhinostomy. Discuss the management of failed DCR. (2008)
76. Complications of DCR Surgery. (2005)
77. Land marks and complications of DCR surgery. (2003)
78. Management of failed DCR. (2000)
79. Describe endonasal dacryocystectomy - advantages and limitations. (1999)



C) ORBIT

ANATOMY

ORBITAL SPACES

80. a) Surgical spaces of orbit b) discuss different approaches to orbitotomy and management of unilateral proptosis [4+(3+3)] J2018
81. Anatomy and relations of the surgical spaces of the orbit, and their clinical implications. (6+4) D2017
82. Various surgical approaches to the orbit with their respective indications and advantages. (5+5) J2016
83. a) What are the surgical spaces of the orbit? b) What are the surgical approaches? c) Role of MRI & CT in diagnosis of ocular lesions. (2+3+5) D2015
84. a) Orbital Spaces and their applied importance b) Superior Orbital Fissure: Anatomy and associated clinical features. J2014
85. What are the surgical spaces of the orbit? Compare and contrast ultrasonography Vs CT scan for orbital disease. D2012
86. Enumerate orbital spaces. Write down 4 common tumors in the central space according to its frequency. D2010

WALLS OF ORBIT

87. a) Anatomy and relations of the medial and lateral orbital wall.
b) Indications of orbital decompression.
c) Common causes of severe bleed during external dacryocystorhinostomy (DCR) (5+2+3) D2018
88. a) Anatomy of medial wall of orbit b) What is the importance of orbital decompression? c) What is the most common cause of severe bleeding during external DCR? (5+3+2) J2018
89. Draw labelled diagram(s) depicting walls of the orbit. Describe in detail the medial wall of the orbit. Describe the applied anatomy of the optic canal. (3+3+4) D2014
90. Describe the bones of the four walls of the orbit. Specify the weak spots. (4+4+2) J2011
91. Ocular and orbital venous drainage. (2005)

CAVERNOUS SINUS

92. a) Cavernous sinus syndrome - clinical presentation & management. b) Superior orbital fissure syndrome - clinical presentation & management. (5+5) D2019
93. Describe the anatomy of cavernous sinus. Name all the structures piercing through it. (5+5) J2013
94. Draw cross section labelled diagram of cavernous sinus. Describe clinical features of cavernous sinus thrombosis. J2012
95. Clinical Features of Carotico-cavernous fistula. (2004)

SOF

96. a) Anatomy of superior orbital fissure. b) Anatomy of cavernous sinus. (5+5) J2017
97. Draw a labeled diagram of the superior orbital fissure specifying the structures – intraconal and extraconal. Enumerate signs of orbital apex syndrome. (6+2+2) J2011

INVESTIGATIONS

CT/MRI

98. Principles of MRI and its role in practice of Ophthalmology. (4+6) J2018
99. Discuss the role of various imaging techniques in ophthalmic practice. (2006)
100. Clinical uses of CT scan in ophthalmology. (2001)

IMPRESSION CYTOLOGY

101. Clinical and impression cytology features of ocular surface disorders. (10) APR 2016

BIOPSY

102. Describe the methods, risks and benefits of tumour biopsy for intraocular and extraocular tumours. (5+2+3) D2019
103. Fine needle aspiration biopsy in ophthalmology. (2001)

PROPTOSIS

104. A 50-year-old female presents with abaxial proptosis. Discuss differential diagnosis, evaluation and management. (3+3+4) D2018
105. A middle-aged female presents with unilateral proptosis of one-year duration. Discuss differential diagnosis, evaluation and management. (3+4+3) J2017

- 106.a) Causes of bilateral childhood proptosis. b) How would you investigate such a case? (5+5) D2015
 107. Describe the causes, types, investigation and management of a case of unilateral axial proptosis. J2014
 108. Give differential diagnosis of painless progressive proptosis in a 35-year-old man. Describe clinical features, histopathology and management of cavernous hemangioma. J2012
 109. Differential diagnosis of proptosis in children. J2010
 110. Discuss differential diagnosis and management of proptosis in a seven-year-old child. (2008)
 111. Unilateral Proptosis in a 3-year-old Child. (2005)
 112. Painful Proptosis. (2002)
 113. Evaluation of uniocular proptosis in a child. (2001)
 114. Proptosis in a Two-years-old child. (1999)

ORBITAL INFLAMMATORY DISEASE

115. Describe in detail diagnosis and management of idiopathic orbital inflammatory disease. (10) D2013
 116. Define & classify pseudotumor of the orbit. Enumerate the clinical features, differential diagnosis of the condition. Make a flow chart on management of a 55-year-old presenting with pseudotumor of right orbit. (2008)
 117. Pseudotumor (IOID). (2004) (2000)
 118. Rhinosporidiosis. (2000)
 119. Orbital Cellulitis. (1999)

TED

120. Etiopathogenesis, clinical features and management of thyroid orbitopathy. (2+4+4) D2017
 121. Grading and management of thyroid related ophthalmopathy. What is the role of surgery in management? 10 October 2017 FAT
 122. Etiopathogenesis, clinical picture, differential diagnosis and management of thyroid orbitopathy. (2+3+2+3) J2016
 123. Discuss ophthalmic manifestation of thyrotoxicosis. J2012
 124. Grading and management of thyroid related ophthalmology. What is the role of surgery in management? (8+2) J2011
 125. Clinical features and management of thyroid ophthalmopathy. D2009

DERMOID CYST

126. Clinical presentation, diagnosis, histopathology and management of two most common premalignant epibulbar ocular tumours. (5x2) D2015
 127.a) What is a dermoid cyst? b) Systemic associations of dermoid cyst. c) Differential diagnosis of epibulbar swellings. (2+4+4) J2015

ORBITOTOMY

128. Discuss briefly various approaches in orbital surgery with specific indications in each approach. D2012
 129. Enumerate four important complications of orbital surgery. D2012
 130. What are the surgical approaches to orbit? Describe indications, surgical steps and complications of lateral orbitotomy. (2+2+3+3) D2011
 131. Indications, procedures and complications of lateral orbitotomy. JUN 2009, (2002) (2002)
 132. Name different types of surgical approaches for orbitotomy and give the indications and contraindications. (2006)
 133. Indications and method of Trans-frontal Orbitotomy. (2001)

BLOW OUT FRACTURE

134. What are the surgical options in the management of a blowout fracture of the orbit? Discuss the indications for each. (5+5) J2019
 135. What is pure and impure blow-out fracture? Describe mechanism, CF, investigations and management of blow-out fractures. 10 October 2017 FAT
 136. Blow out fracture of orbit – Clinical features, investigations and management. (3+3+4) D2016
 137. A 27-year-old driver developed left eye hypertropia following an accident. How will you diagnose and manage him? (4+6) J2016
 138. A 27-year-old male presents with acute periorbital swelling, redness and pain. How will you investigate, diagnose and treat this case? (3+3+4) J2016
 139.a) Clinical presentation of a case of orbital blowout fracture. b) How will you investigate such a case? c) Indications for surgery and the surgical principles. (3+2+5) J2015
 140. What are the clinical features of blow out fracture? Discuss its investigation and management. (2+2+6) J2013



141. Describe clinical features, investigations and management of a case of medial wall fracture of orbit. J2012
142. What is pure and impure Blow-out fracture? Describe mechanism, clinical features, investigations and management of Blow-out fracture. (2+3+2+3) D2011
143. Discuss blow-out-fracture of the orbit. (2002)

ANOPHTHALMIC/ CONTRACTED SOCKET

144. a) Grading and management of contracted socket. b) What is the etiology of orbital hydatid cyst; discuss its evaluation and management. (5+5) D2019(GUWAHATI) (2007)
145. How will you evaluate and manage an anophthalmic socket in a 3-year-old child? (5+5) D2018
146. Acquired causes and management of an anophthalmic socket. (4+6) J2015

EXENTERATION

147. Indications and techniques of orbital exenteration. Discuss the methods of rehabilitation. [(4+4) +2] D2017

ORBITAL IMPLANTS

148. Describe types of Orbital Implants and their advantages. (5) J2019
149. a) What are orbital implants and their indications? b) Enumerate different materials of orbital implants. c) What are the advantages and complications of orbital implants? (3+3+4) J2017
150. Classification and management of contracted socket. (2007)
151. Development of different types of orbital implants. (2005)

BOTULINUM TOXIN

152. Botulinum Toxin use in Ophthalmology — Mechanism of action, indications and complications. (2+4+4) D2019
153. Uses of botulinum toxin in the eye. 5 J2019 Principles, indications and complications of Botulinum toxin chemo denervation. (2+4+4) D2015 (2006) (2005) (1999)

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II. CORNEA, CONJUNCTIVA, OCULAR SURFACE AND REFRACTIVE SURGERY

A) DRY EYE DISEASE

1. Tear film
2. Dry eye disease
3. Sjogren syndrome
4. Lubricants
5. Computer vision syndrome

B) CONJUNCTIVA

1. Investigations
2. Conjunctivitis
 - a) Ophthalmia neonatorum
 - b) Viral conjunctivitis
 - c) EKC
 - d) Allergic conjunctivitis, VKC
3. Cicatricial conjunctivitis
4. SJS
5. Xerophthalmia
6. Trachoma
7. SLK
8. Pterygium
9. Glue

C) OCULAR SURFACE

1. Limbal anatomy and stem cells
2. Ocular surface disorders
3. Chemical burns
4. Ocular surface reconstruction
5. OSSN

D) CORNEA

1. Anatomy and physiology
 - Endothelium
 - Corneal transparency
 - Drug penetration through cornea
2. Investigation
 - a) Keratometry
 - b) Pentacam
 - c) ASOCT
 - d) UBM
 - e) IVCN
 - f) Culture
3. Corneal ulcer
 - a) Bacterial keratitis
 - b) Viral keratitis
 - c) Herpes simplex keratitis
 - d) Herpes Zoster ophthalmicus
 - e) Fungal keratitis
 - f) Acanthamoeba keratitis
 - g) PUK
 - h) Mooren's ulcer
 - i) Neurotropic Keratitis
4. Keratoconus and its management
5. Corneal dystrophy
6. RCE



7. Corneal lacerations
8. PBK
9. Keratoplasty
 - a) PK
 - b) DALK
 - c) DSEK/DSAEK/PDEK
 - d) Eye banking
10. KRRO
11. Corneal tattooing
12. CL

E) REFRACTIVE SURGERY

1. Types
 - a) LASIK
 - b) SMILE
 - c) CK
 - d) Presbyopia- surgical management
2. Phakic IOL
3. ICRS

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A) DRY EYE DISEASE

TEAR FILM

1. a) Structure of tear film. b) Methods to evaluate tear film disorders. (4+6) J2017
2. Discuss the components of tear film and functions of each layer. Give Lemp's classification of dry eye syndrome D2012
3. Draw labeled diagram of tear film. What is neuronal reflex arc and its relevance to development of new modality in the treatment of dry eye? (5+3+2) D2011

DRY EYE DISEASE

4. a) Define dry eyes as per DEWS 2 report. b) Role of anti-inflammatory agents in management of dry eyes. c) Diagnosis and management of Meibomian gland disease. (3+2+5) D2019
5. Clinical features, evaluation and management of Meibomian gland disease. (3+3+4) D2018
6. Classification of management of dry eye. J2012
7. Describe signs, symptoms and investigations in dry eye. (1999)

SJOGREN'S SYNDROME

8. Sjogren syndrome- CF, diagnosis and Management (3+3+4) J2018
9. Causes, clinical features, special investigations and management in a case of Sjogren syndrome. (2+2+3+3) J2015

LUBRICANTS

10. a) Classify various ocular lubricating agents used in the management of dry eye disease.
b) What is the role of preservatives used in them?
c) What are the various types of preservatives used in lubricating agents? J2014
11. Pharmacotherapeutics of Dry Eye. (2005)
12. Management of dry eyes. (2001)

COMPUTER VISION SYNDROME

13. What is computer vision syndrome? Describe its causes and management. (2010)



B) CONJUNCTIVA

INVESTIGATIONS

14. Conjunctival Smear. (2001)
15. IgE estimation in eye disorders. (1999)

CONJUNCTIVITIS

16. Classification of conjunctivitis and its management. D2009

OPHTHALMIA NEONATORUM

17. Discuss the clinical features, differential diagnosis and management of ophthalmia neonatorum. (3+3+4) D2019 (GUWAHATI), D2017

VIRAL CONJUNCTIVITIS

18. Clinical features and management of adenoviral keratoconjunctivitis (5+5) J2019
19. Clinical features, pathogenesis, differential diagnosis and management of a case of viral conjunctivitis. (2+2+2+4) J2015

EKC

20. Epidemic keratoconjunctivitis; etiology, management and sequelae. D2010
21. Write down clinical picture and management of epidemic keratoconjunctivitis. J2009

ALLERGIC CONJUNCTIVITIS, VKC

22. Describe clinical features, pathology and treatment of vernal conjunctivitis. J2014, 2004
23. Classify allergic conjunctivitis. Discuss the pathogenesis, clinical features and treatment options in vernal keratoconjunctivitis. (2+2+3+3) D2011
24. Discuss briefly the newer anti-allergic drugs and their mechanism of action. (2006)
25. Discuss management of spring catarrh with newer drugs & their benefits over conventional drugs. (2002)
26. Drugs Used in Allergic Conjunctivitis. (1999)

CICATRICIAL CONJUNCTIVITIS

27. a) Etiopathogenesis and clinical features of cicatricial conjunctivitis.
b) Complications and management of cicatricial conjunctivitis. (5+5) D2018

SJS

28. Describe the clinical features, evaluation and management of ocular manifestations of Steven Johnson Syndrome. (3+3+4) D2019
29. Give management of severe dry eye in a case of Steven Johnson syndrome. D2010 (2007) (2000)

TRACHOMA

30. a) Etiopathogenesis and lid changes in trachoma. b) Outline the management of stage 2 Trachoma (6+4) J2018
31. Describe clinical and laboratory diagnosis of trachoma. Discuss its management, complications and prophylaxis. What is SAFE strategy? [4+(2+2+1)+1] D2014
32. Discuss classification of trachoma and pathological changes seen in each stage. (2008)
33. Clinical features, investigations treatment & prevention strategies for trachoma. (2008)

XEROPHTHALMIA

34. Define and classify xerophthalmia. Give the guidelines of treatment and prophylaxis. [(2+4) +(2+2)] D2017,2008
35. Describe etiopathogenesis, clinical features, prevention and management of keratomalacia. (2+2+2+4) D2011
36. Management of 9 months old child with grade IV PEM with bilateral Xerophthalmia. (2009)
37. Xerophthalmia – Etiopathogenesis, classification, management. Write measures to prevent the disease from occurring in the siblings of the patient. (2008)
38. Write short note on role of vitamin A in retinal function. (2006)
39. Vitamin A deficiency: ocular manifestations. (2000)
40. Vit-A prophylaxis Programme. (2001)



SLK

41. A 34-year-old lady presents with chronic inflammation and irritation of superior limbus. What is the most likely diagnosis, pathogenesis and management of the disease? (2+3+5) J2016

PTERYGIUM

42. a) Sutureless pterygium surgery with autologous conjunctival graft. b) Causes and management of neurotrophic keratopathy (5+5) D2019(GUWAHATI)
43. Current techniques for management of recurrent pterygium. b) P.E.R.F.E.C.T technique for pterygium management? (7+3) J2017
44. Discuss the causes and presentation of pterygium. How will you manage it? D2012
45. Describe modern management of Pterygium to prevent its recurrence. D2010
46. Surgical technique of pterygium excision. J2010
47. Describe indications and methods of pterygium surgery. How to prevent recurrence? J2009
48. Pterygium and its management. (2006) (2005) (2001)
49. Recurrent Pterygium. (2003) (2000)

GLUE

50. Indications of fibrin glue in Ophthalmology. 10 D2016
51. Describe application of Cyano-acrylate tissue adhesive in ophthalmology. (2002)
52. Describe efficacy of synthetic and biologic bioadhesives in ophthalmology. (1999)

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C) OCULAR SURFACE

LIMBUS

53. a) Limbal anatomy. b) Relationship between limbus and corneal epithelial repair. (5+5) D2016
54. a) Anatomy of Limbus and its surgical importance. b) Corneal wound healing and the role of Limbus. [(3+3) +(2+2)] D2015
55. Role of stem cell in ophthalmology. D2009 J2010 D2010
56. Discuss limbal stem cells. (2002)

OCULAR SURFACE DISORDERS

57. Enumerate the conditions associated with corneal neovascularization. Briefly discuss the mechanism and various treatment modalities with their rationale of treatment in the management of this condition. (3+3+4) J2013
58. How do you diagnose severe ocular surface disease? Discuss causes and management of these entities, when existing in unilateral and bilateral manner. [3+(3+4)] J2013
59. Immunological basis of ocular surface inflammation. (2005)

CHEMICAL BURNS

60. a) Mechanism of corneal transparency.
b) Pharmacotherapy of alkali corneal injury. (5+5) J2019
61. a) Management of unilateral 5-day old chemical burn b) Newer concepts in management of ocular chemical burns 5+5 J2018
62. Clinical features, evaluation and management of alkali ocular injury. 2+3+5 J2017
63. Give different classifications of chemical injuries of eye with their prognostic significance. Give basic outline in the management of moderate to severe chemical injury in acute and late reparative phase. 5+5 D2013
64. Discuss clinical features, complications and management of ocular alkali burns. (3+2+5) D2011
65. Write down acute management of alkali burns. J2009
66. Management of Chemical Burns of Eye. (2007)
67. Discuss the recent trends in management of chemical burns. (2006)

OCULAR SURFACE RECONSTRUCTION /LSCD/ SLET

68. Discuss the newly available options for the management of Limbal stem cell deficiency. 10 J2019 (2008)
69. a) Ocular surface reconstruction. b) SLET - Indications, intraoperative & postoperative complications and their management. (4+6) D2017
70. Anatomy of limbus with special reference to limbal stem cells. Importance of stem cells in corneal wound healing. Causes of LSCD. LSCT procedures (2+2+2+4) J2017 (2004,1999)
71. Role of amniotic membrane in ophthalmic surgery. Describe one such surgery in detail. What are the side effects of this technique? (2008) (2007) (2005)
72. Give the differential diagnosis of nodule at limbus and how to manage it. (2005)
73. Write management of ocular surface disorders. (2003)

OSSN

74. Clinical features, histopathology and management of ocular surface squamous neoplasia (OSSN). 3+4+3 D2016
75. Describe the etiopathogenesis and histopathology of ocular surface squamous neoplasia (OSSN). Write briefly on the use of anti-metabolites in the management of OSSN. D2012



D) CORNEA

ANATOMY

76. a) Describe briefly anatomy of cornea and its clinical significance b) What are the different types of dystrophies of the cornea with respect to its anatomy? 5+5 D2019 (GUWAHATI)

ENDOTHELIUM

77. Anatomy and physiology of corneal endothelium. (5+5) J2016

CORNEAL TRANSPARENCY

78. a) Transparency of cornea. b) Clinical features, etiology and management of corneal edema. [3+(2+2+3)] J2019
79. Physiology of corneal transparency: Factors responsible and theories. (2008)
80. Factors maintaining the transparency of cornea. (2000)

DRUG PENETRATION THROUGH CORNEA

81. Describe the barriers to drug penetration in the cornea. What is partition coefficient? Describe various factors affecting drug penetration with respect to drug formulation and corneal anatomy. (4+2+4) D2014
82. Describe the barriers to drug penetration in the cornea. Define partition coefficient. Discuss the various factors affecting drug penetration through the cornea. 4+2+4 J2011
83. Write down factors facilitating / affecting penetration of drugs through cornea. D2010, J2009

INVESTIGATIONS

KERATOMETRY

84. Give principle of keratometry. What are the types of keratometers and basic difference between them? Give typical keratometric features in keratoconus. (4+3+3) J2013

PENTACAM

85. Briefly explain optics of Scheimpflug Imaging of the cornea and basics of how to interpret the findings of Pentacam images. (3+7) D2019 (GUWAHATI)
86. What is Scheimpflug's principle? How is it useful in Ophthalmology? Name the appliance which uses this principle. (4+4+2) J2013
87. Method of examination of cornea. D2010

ASOCT & UBM

88. a) Comparative role of UBM and anterior segment OCT in various ocular disorders. What are the cosmetic options for corneal opacity in blind eye? (7+3) D2019 (GUWAHATI)
89. a) Describe newly available modalities for imaging of the anterior segment? (5) J2019
90. a) Principle and uses of UBM. b) Its advantages and disadvantages over anterior segment OCT. [(2+2) +(3+3)] D2017
91. a) What is UBM? b) Indications of use of this diagnostic modality. c) Enumerate conditions where it is a preferred mode of investigation. 3+3+4 D2016
92. a) What is Ultrasound biomicroscopy (UBM)? Discuss in brief the principles of UBM. b) What are its advantages/ disadvantages over anterior segment OCT? J2014
93. Write briefly about UBM and OCT in anterior segment diagnostics with potential limitations and clinical applications. D2012
94. Enumerate principle, advantages and disadvantages for various modalities for anterior segment imaging. J2012

IVCM

95. Confocal microscopy. (2005)

CULTURE

96. To establish an ocular microbiology lab which all Media to be needed. Name the diseases in which each of these media is useful. (6+4) J2013

CORNEAL ULCER

97. a) Clinical and microbiological workup of corneal ulcer patient.
b) Additional workup in suspected acanthamoeba and atypical mycobacterial keratitis. (3+3) +(2+2) D2015

98. Different clinical features of corneal ulcer due to bacterial, fungal or viral in a tabular fashion. Name two pathogens. 7+3 J2011
99. Management of corneal ulcer. D2009
100. Describe the normal conjunctival flora. Discuss the factors predisposing to corneal infection. (1999)

BACTERIAL KERATITIS

101. a) Clinical features and causative organisms of a case of bacterial corneal ulcer. b) How will you investigate such a case? [(3+2) +5] J2015
102. Management of perforated corneal ulcer following bacterial keratitis. J2010
103. Microbiology and pathology of bacterial corneal ulcer. (2008)

FUNGAL KERATITIS

104. Classify fungal infections of the eye. Discuss in brief the presentation, diagnosis and specific management of fungal keratitis. D2012
105. Give clinical picture, complications and management of fungal corneal ulcer. J2009 (2007,2005,2003,2002,2001,1999)

VIRAL KERATITIS

106. Recent advances in the management of viral keratitis. (2008)
107. Dendritic Corneal ulcer. (2002)
108. Discuss the diagnosis, management and complications of Viral Keratitis. (2006) (2003) (1999)
109. Viral infections of eye. (2000)

HERPES SIMPLEX KERATITIS

110. Clinical presentation, differential diagnosis and management of recurrent herpes simplex keratitis. 3+3+4 D2017
111. Clinical features and management of corneal epithelial infectious ulcers and immune keratitis in Herpes Simplex infection. (5+5) D2016, (2001)
112. Causes and treatment of Interstitial keratitis. (2003)

HERPES ZOSTER OPHTHALMICUS

113. Clinical features, complications and management of a case of Herpes Zoster Ophthalmicus. (4+3+3) D2018
114. What are the ocular manifestations of Herpes Zoster Ophthalmicus in acute and chronic state? How do you manage them? What is the management of post-herpetic neuralgia? [(2+2) +3+3] D2015
115. Corneal involvement and management of Herpes Zoster Ophthalmicus. (2005) (2004)

ACANTHAMOEBA KERATITIS

116. Describe clinical features, laboratory diagnosis, prevention and management of Acanthamoeba keratitis. D2012, J2012 (2002,2000)

MICROSPORIDIAL KERATITIS

117. Describe the clinical features, evaluation and management of microsporidial keratitis. (3+3+4) D2019

PUK

118. Enumerate the causes of peripheral corneal ulceration/thinning. Discuss diagnostic features and management of Mooren's ulcer. 5+5 D2019(GUWAHATI)
119. Etiopathogenesis, clinical features and management of chronic, non-healing peripheral corneal ulcer. (3+3+4) J2017
120. Discuss differential diagnosis of peripheral ulcerative keratitis. Briefly outline the workup in a patient with peripheral ulcerative keratitis. (7+3) D2011, (2003)
121. Discuss the differential diagnosis of non-ulcerative keratitis. (1999)

MOOREN'S ULCER

122. Discuss diagnostic features and management of Mooren's ulcer. 5 D2019(GUWAHATI)
123. Presentation, pathogenesis and management of Mooren's ulcer. (3+3+4) D2015 (2008,1999)

NEUROTROPIC KERATITIS

124. Causes and management of neurotropic keratopathy (5) D2019(GUWAHATI)



KERATOCONUS AND KXL

- 125.a) Explain the optics of Scleral Contact Lens and RGP Contact Lens. b) Contact lenses for Keratoconus. (5+5) D2019
126. What is the treatment of keratoconus (5) D2019 (GUWAHATI)?
127. Corneal Crosslinking — Principles, indications & different protocols. (3+3+4) D2019
128. How will you suspect, investigate and treat a case of preclinical keratoconus? (3+3+4) D2018
129. Contact lens options in keratoconus and irregular corneas with high astigmatism. (10) J2017, 2001
130. 25-year-old man complaining of itching & redness of both eyes since childhood presents with gradually increasing photophobia and refractive error. Outline the workup and management. (5+5) J2018
131. A 25-year-old woman presents with inability to correct her vision completely with glasses. Her keratometric values are 48D@95°/52D@185°(OD), 50D@65°/55D@155°. What is your plausible diagnosis and discuss important steps in further confirming your diagnosis and factors influencing her management? (2+3+5) D2015
132. Describe the corneal topography findings in keratoconus. How do you grade the severity of keratoconus? (10) D2014
133. Enumerate methods to prevent and treat keratoconus, giving indications of each method. D2010 (2008)
134. Describe the recent methods for the treatment of keratoconus. J2009
135. Management of keratoconus. D2009
136. Visual rehabilitation in keratoconus. (2008)
137. Management of Irregular Astigmatism in Keratoconus. (2005)
138. Histopathology of corneal button received from advanced keratoconus. (2001)

CORNEAL DYSTROPHY

139. What are the different types of dystrophies of the cornea with respect to its anatomy? (5) D2019 (GUWAHATI)
- 140.a) Describe the inheritance pattern and clinical features of corneal stromal dystrophies. b) Discuss about merits and demerits of endothelial keratoplasty. (2+2+3+3) D2019
141. Enumerate the “stromal corneal dystrophies”, their pathology, clinical features and management. (2+2+2+4) D2014
142. Classify corneal dystrophies. Describe the histopathological changes of stromal dystrophies and specific stains used in each. J2014
143. Describe latest classification of corneal dystrophies. Describe clinical features of three major corneal stromal dystrophies. How do you treat recurrent erosions by them? 3+(2×3)+1 J2011

RECURRENT CORNEAL EROSIONS

144. Describe different types of recurrent corneal erosions. Give an outline of their treatment. J2014
145. Management of persistent epithelial defect. (2005)

CORNEAL LACERATION

146. A patient who sustained corneoscleral perforation in road traffic accident was admitted and repair was done. 3 days after the surgery he complained of photophobia and blurry vision in other eye. What is your diagnosis? How will you manage it? What are the histopathological findings expected in this case? D2012
147. Describe with diagram the management of a 22-year-old patient presenting with corneoscleral perforation after road traffic accident 2 hours back. J2012
148. Management of corneoscleral perforation with iris prolapses in a 5-year-old child after injury with bow and arrow during Diwali. J2010
149. Management of penetrating ocular injury. J2010
150. Basic techniques of managing corneoscleral injury with vitreous prolapse. D2009
151. Penetrating injury-Principles and Management. (2005)

PBK

152. 52 Y F underwent phacoemulsification 3 weeks back & has persistent corneal edema. DD. Approach in evaluating and investigating the patient. Management. Precautions while planning surgery of the other eye (2+4+3+1) D2018
153. What is pseudophakic bullous keratopathy? Etiopathogenesis, clinical features and management of pseudophakic bullous keratopathy. (1+2+3+4) J2015
154. Causes, clinical presentation and treatment modalities for pseudophakic bullous keratopathy. (3+2+5) J2017
155. Write down the methods of prevention and management of pseudophakic bullous keratopathy. D2009
156. Bullous Keratopathy- pathology and measures to prevent it. (2006, 2007, 2001, 2000)
157. Corneal edema-causes and treatment. (2005)



KERATOPLASTY

PK

- 158.a) What are various types of corneal transplant surgeries? b) What is Organ Transplant Act and its relevance to Ophthalmology? (5+2+3) D2019 (GUWAHATI)
159. What is primary graft failure following keratoplasty? How do you differentiate it from graft rejection? What are the advantages and disadvantages of DALK as compared to PKP? 10 FAT2017
160. Write immunological aspect, clinical features, risk factors and management of corneal graft rejection. (3+2+3+2) D2011
161. Clinical features and management of acute graft rejection. D2009
162. Indications, usefulness and complications of small corneal grafts. (2003)
163. Discuss indications, usefulness and complications of large corneal grafts. (2002)
164. Graft rejection. (1999)

LAMELLAR KERTOPLASTY

- 165.a) Enumerate various types of lamellar keratoplasty. b) How would you decide which lamellar procedure would be appropriate for a patient? (5+5) J2019
166. Current status and indications of anterior and posterior lamellar corneal surgeries. (5+5) D2016
167. Describe the different types of lamellar keratoplasty procedures and two indications of each. (10) J2011 (2006)
168. Deep lamellar endothelial keratoplasty- indications and steps of surgery. (2008) (1999)
169. Outline the recent advances in keratoplasty technique. (2006)

DALK

170. Indications, techniques, advantages and disadvantages of deep anterior lamellar keratoplasty. (2+2+3+3) D2017
171. What are the indications of DALK and enumerate various methods to do it? D2010

DSEK/ DSAEK/DMEK/PDEK

172. Discuss about merits and demerits of endothelial keratoplasty (3+3) D2019
- 173.a) Indications and evaluation of a case for lamellar keratoplasty.
b) What are the causes of failure of a DSAEK procedure?
c) How does DSAEK differ from DMEK surgically? (5+2+3) D2018
174. Recent advances in endothelial keratoplasty (10) J2018
175. Critically evaluate DSEK/DSAEK & DMEK. (5+5) J2017
176. Indications, advantages, disadvantages and long-term results of Descemet's stripping endothelial Keratoplasty. (2+3+3+2) J2015
177. Discuss indications, surgical procedure, complications and advances in endothelial keratoplasty. J2012

EYE BANKING

- 178.a) What are the differences in Clinical and eye bank specular microscope? b) What are the essential components of eye bank (4+6) D2019 (GUWAHATI)
- 179.a) Enumerate few gene mutations for ophthalmic disorders.
b) What are the different methods of corneal preservation with recent advance?? (4+6) D2019 (GUWAHATI)
180. Eye banking- define concepts. Role of various cornea preserving medias, strategy to improve corneal donation. Comment on current status of eye banking in India. 10 FAT2017, (2008, 2004,2003,2002,2000)
- 181.a) Enumerate the various short term and intermediate term methods for corneal preservation.
b) What are their main constituents?
c) Advantages and disadvantages of these media. (4+3+3) J2015
Give ideal requirements for setting of eye bank. What are the functions of eye bank? Mention the various medias with their constituents for cornea preservation. J2013

KPRO

- 182.a) Visual prosthesis. b) Keratoprosthesis. (5+5) D2019 (2001,1999)
183. Keratoprosthesis a) Types b) indication (8+2) J2018
184. Write a note on "Kerato-prosthesis"? (10) D2011



CORNEAL TATTOOING /CL

185. What are the cosmetic options for corneal opacity in blind eye? 3 D2019 (GUWAHATI)
186. Prevention of HIV infection in contact lens practice. (2008)
187. Give indications and fitting philosophies of therapeutic contact lenses. (2006)
188. Therapeutic Contact lens. (2005)
189. Contact lens fittings in (a) Aphakia (b) Keratoconus. (2003)

CASES

190. 30-year-old male reports with acute onset unilateral red eye and diminished vision of three days duration with watery discharge, a corneal epithelial lesion, stromal infiltration and an immune ring on the endothelium. He gives a history of previous episodes of red eye in the same eye and has lesions suggestive of previous corneal disease. Make a flowchart describing how you would arrive at a diagnosis and how you would manage the case. (10) D2019

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E) REFRACTIVE SURGERY

TYPES

191. a) Enumerate Kerato refractive surgeries.
b) Intraoperative and postoperative complications of LASIK and their management. (4+3+3) J2019
192. Newer advances in refractive surgery (10) J2018
193. Indications and techniques of surgical correction of myopia. (2+8) D2017 (2001,2000,1999)
194. Management of astigmatism in a: i) 20-year-old male, and ii) 50-year-old male with cataract. (5+5) D2016
195. Various refractive procedures. J2010
196. What are the different effects of keratorefractive surgery? Give short description of each. (10) D2013 (2000)
197. Discuss the workup of a patient planned for refractive surgery. Give relevance of each investigation. What are the absolute contradictions for laser refractive surgery? J2012

LASIK

198. What are the causes of dry eye post LASIK surgery? How will you manage it? (5+5) D2016
199. a) How will you work up a case for LASIK surgery? b) What are the modalities available and which one is preferred and why? 3+(2+5) J2016 (2006)
200. Describe low and high order aberration and mention the role of wave front analysis in LASIK. J2010
201. List various aberrations of the eye. What are higher order aberrations and give basic principle of WF related refractive surgery? D2012
202. Enumerate the complications of LASIK surgery in a myope of -8 D spherical in both eyes. D2009
203. Describe in detail complications of blade-based LASIK. Classify them as vision-threatening and non-vision threatening in your description. 5+5 D2013 (2004)
204. Discuss merits and demerits of LASIK versus PRK in management of myopia. (1999)

SMILE

205. SMILE in refractive surgery: Advantages and disadvantages over conventional LASIK surgery. 10 D2016
206. a) SMILE — Indications, intraoperative & postoperative complications and their management. b) Phakic IOLs — Types, indications, intraoperative & postoperative complications and their management. 5+5 D2019

CK

207. What is conductive Keratoplasty? What is the mechanism, indications, advantages and disadvantages of conductive keratoplasty? J2014

PRESBYOPIA

208. What are the surgical options for management of presbyopia? (10) J2019
209. a) What are the recent modalities available to treat Presbyopia? b) What are their advantages and limitations? [2+(4+4)] J2016

PHAKIC IOL

210. Phakic IOLs — Types, indications, intraoperative & postoperative complications and their management. 5 D2019
211. What are phakic IOLs? Discuss their indications, techniques and complications. [2+(3+2+3)] D2017
212. What are the commonly used Phakic IOLs? b) What are their indications? c) How does one calculate their power and size? J2014
213. What are the commonly used phakic IOL in refractive surgery? What material are they made of? What are the indications of these lenses? D2012
214. Indications, contraindications and complications of phakic IOL in the management of high myopia. J2009

ICRS

215. Corneal ring segments – indications and complications. (5+5) D2016
216. What are Intacs and the potential complications of Intacs? Also name refractive surgery procedures for hyperopia. (2+6+2) J2011



III. LENS

1. Anatomy, physiology and development
2. Biometry
3. Anesthesia
4. Etiology
 - a) Age-related cataract
 - b) Metabolic cataract
 - c) Congenital cataract
 - d) Unilateral Congenital cataract
 - e) Bilateral Congenital cataract
 - f) Subluxated, dislocated lens and ectopia lentis
5. Phacoemulsification
6. Laser in cataract surgery
 - a) FLACS
 - b) YAG
7. IOL
 - a) MFIOL
 - b) Toric IOL
 - c) Accommodative IOL
8. Viscoelastic substances
9. Cataract surgery in special situations
 - a) Cataract surgery in patient with astigmatism
 - b) Cataract surgery in SO filled eye
 - c) Cataract surgery in small pupil
 - d) Cataract surgery in low endothelial cell count
 - e) Cataract surgery in PXF
 - f) Cataract surgery in Diabetic
10. Complications of cataract surgery
11. Secondary IOL
 - a) Posterior dislocation of IOL
 - b) PCR
 - c) SIA
 - d) Posterior dislocation of nuclear fragments
 - e) ZD
 - f) CBS
 - g) PCO
12. Cases



LENS

ANATOMY, PHYSIOLOGY & DEVELOPMENT

1. a) Metabolism of human crystalline lens b) biochemical factors responsible for cataract (5+5) D2019
2. a) Development of the lens. (2000)
b) Enumerate congenital abnormalities of lens. (2003)
c) Factors contributing to genesis of cataract. (3+2+5) J2019
3. a) Metabolism of lens in the eye b) how does lens maintain transparency? (4+6) J2018
4. a) Metabolism of crystalline lens. b) Biochemical factors responsible for cataractogenesis (4+6) D2017
5. a) Anatomy & development of crystalline lens and zonules. b) Enumerate congenital anomalies of lens. [(4+4) +2] J2016
6. a. Anatomy of the crystalline lens.
b. Its physiology and how it remains clear.
c. Its embryological development with suitable diagram(s). [(3+3+4)] D2014
7. Discuss the metabolism of crystalline lens. Mention the factors responsible for cataract formation. What are the changes that occur in diabetic etiology? (4+4+2) D2013
8. Briefly write on the development of crystalline lens. Enlist the biochemical mechanism of cataractogenesis. Briefly write about various congenial and developmental anomalies of lens. (3+3+4) J2013
9. Write short note on lens development, anatomy, lens sutures and factors affecting lens transparency. D2012
10. Draw a slit lamp optical section diagram of the crystalline lens showing the different nuclei and zones. Also describe the implications of embryological development of the capsule. (7+3) J2011

BIOMETRY

11. a) Explain principles used to calculate IOL power in a silicon oil filled eye. b) Describe dysphotopsia. c) Discuss the problems of cataract surgery in post vitrectomy eyes (3+2-4) D2019 (GUWAHATI)
12. a) Calculation of IOL power in children. b) Selection of IOL in children (5+5) D2019
13. a) What is the principle of Optical coherence biometry? b) Which ophthalmic equipment uses this principle? c) What are the advantages and disadvantages of this type of biometry? (2+2+6) J2018
14. Describe various IOL power calculation formulae and how will you calculate IOL power in post refractive surgery patient? (7+3) D2014
15. Describe different formulae for biometry. (2006)
16. Intra-ocular lens power calculation. (2002) (2001) (1999)

ANESTHESIA

17. After giving one ml of a peribulbar anesthetic, there is sudden proptosis, pain, sub-conjunctival hemorrhage, severe chemosis and loss of vision with loss of all ocular movements and inability to close the eyelids.
a) Describe what your further course of action would be.
b) What are the signs of globe perforation during peribulbar block? (5+5) J2019
18. Describe technique, advantages and disadvantages of topical, retrobulbar block, peribulbar block and facial block anesthesia for ocular surgery. J2014
19. What are the various types of anesthesia used for cataract surgery? Describe briefly merits and demerits of each. (2+4+4) J2013
20. Describe the common agents and techniques for local anesthesia for cataract surgery and their potential complications. (6+4) J2011
21. Describe the early and late complications and peri and retrobulbar infiltration anesthesia. (2002)

ETIOLOGY

AGE RELATED CATARAT

22. Etiopathogenesis of age-related cataract. D2009,2003
23. How will you grade the nucleus before phaco surgery? (2006)
24. Describe various risk factors in age related cataracts. (1999)

METABOLIC CATARACT

25. What is the nature of biochemical abnormality in homocystinuria? Discuss its ocular and systemic manifestations, genetics and management. [3+(4+2+1)] D2014
26. a) Describe various pathways of glucose metabolism in the lens.
b) What metabolic abnormalities cause diabetic and galactosemic cataract?



c) Describe briefly various congenital and developmental anomalies of lens. J2014

COMPLICATED CATARACT/ POST UVEITIC CATARACT

27. Evaluation and management of post uveitic cataract (4+6) D2018
28. a) What are the causes of complicated cataract? b) Principles of management of cataract associated with chronic anterior uveitis. (2+8) J2017,2000
29. Define complicated cataract. What are the various causes for it? How will you manage such cases? (2+4+4) JUN 2013

CONGENITAL CATARACT

ETIOLOGY

30. What is the management of a case of congenital cataract? How is it different from adult cases? (6) D2019 (GUWAHATI)
31. Etiology, inheritance, morphology and 4 main systemic metabolic associations of congenital cataract. (2+1+3+4) D2015
32. Congenital Cataract. Etiopathogenesis, types, management strategies and prognosis. (2008,2005,2003,2002)

U/L CATARACT

33. Management of unilateral cataract in a 2-year-old child (10) J2018
34. Management of unilateral congenital cataract in a 3-year-old child. (10) D2016
35. a. Difference between an adult and pediatric eye. (3+4+2+1) D2014
b. Precautions to be observed in doing pediatric cataract surgery and why?
c. What is the relationship between pediatric cataract surgery and glaucoma?
d. Outline complete management of unilateral congenital cataract.
36. Give Indications of surgery for pediatric cataract. Outline complete management and specific surgical challenges in a 2-year-old child with unilateral cataract. (3+3+4) D2012
37. Describe the intraoperative and post-operative management of a unilateral congenital cataract in a 2 years child. J2012
38. Management of unilateral congenital cataract in a 3-year-old child and its post-operative rehabilitation. D2010
39. Management of unilateral congenital cataract. J2010
40. Management of unilateral congenital cataract in a 3-year child. D2009

B/L CATARACT

41. Management strategies of unilateral and bilateral congenital cataract in a 2-year-old child. (5+5) October 2017 FAT
42. A two-year-old child presents with cataract both eyes. Discuss the possible causative factors and its management. D2013,2006

SUBLUXATED, DISLOCATED LENS AND ECTOPIA LENTIS

43. a) How will you manage a case of subluxated lens taken up for routine cataract surgery? b) What is the management of a case of congenital cataract? How is it different from adult cases? (4+6) D2019 (GUWAHATI), 2009,1999
44. a) Effect of blunt trauma on normal lens. b) Management of subluxated lens following trauma. (5+5) D2017
45. a) Systemic associations of Ectopia lentis. b) Management of a case of Ectopia lentis. (4+6) J2016
46. Causes, clinical features and management of ectopia lentis. (3+2+5) J2015 ,2008,2002
47. What is ectopia lentis? Discuss clinical features and complete management of spherophakia and associated problems in a patient with Weill -Marchesani syndrome. (2+8) D2013
48. Name various systemic conditions associated with ectopia lentis. How will you manage a case of subluxated lens? (5+5) J2011
49. Management of subluxated cataractous lens. D2009
50. How will you manage Dislocated lens? (2002)

PHACOEMULSIFICATION

51. a) Parameters involved in fluid dynamics in Phacoemulsification. b) Differences, advantages and disadvantages of Peristaltic versus Venturi pump. (5+5) D2019
52. Define in relation to Phacoemulsification:
 - A. Flow rate and Vacuum
 - B. B. Pulse mode and Burst mode
 - C. Rise time and effective phaco time
 - D. Surge (causes and prevention) (2+2+2+4) D2013
53. Define flow rate, vacuum, rise time, serge and duty cycle in phacoemulsification surgery. What are the basic principles in ultrasonic power modulations and advantages of these modulations? (1+1+1+1+1+3+2) J2013

54. What are the advantages & disadvantages of Phaco-emulsification compared to SICS and MICS? Who invented Phaco-emulsification and couching? (4+4+2) J2011
55. Phakonit (2004)

LASER IN CATARACT SURGERY

FLACS

56. a) Principles of Femto Assisted Cataract Surgery (FACS).
b) Advantages and disadvantages of FACS. (5+5) J2019
57. What is blade free cataract surgery? What are its advantages over conventional phacoemulsification? What are its disadvantages? J2014
58. What is the role of laser in cataract surgery? Discuss its advantages with respect to conventional phacoemulsification. D2012
59. What is femtosecond Laser? Discuss the use of femtosecond laser system in ophthalmology J2012

YAG LASER

60. Utility, Indications and management by YAG Laser. (2002)
61. N:D YAG laser- Mechanism of working and its application. (2001)

IOL

62. Discuss various materials and designs of intraocular lenses. (5+5) DEC 2011
63. Principle, utility and advantages of: a) Square edged optics b) Aspheric optics c) Heparin coated optics 2+4+4 June 2016
64. Recent advances in intra-ocular lenses. (2008)
65. Hydrophobic v/s Hydrophilic IOLs. (2005)
66. IOL in Children-Special Considerations. (2005)
67. Foldable intraocular lenses. (2000)
68. Ideal intraocular Lens. (2005)
69. Intra-ocular lenses-Present and future. (2003)

MULTIFOCAL IOL

70. What are types of multifocal IOL? What are their disadvantages? (5) D2019(GUWAHATI)
71. a) Types of multifocal IOL
b) Case selection and basic principles for premium IOL (5+5) J2018
72. a) Optical principle of multifocal intra ocular lens (MF-IOL). b) Classify MF-IOL. c) Enumerate the patient selection criteria for MF-IOL. (2+4+4) J2017
73. What is the concept and its applications in various full range IOLs such as Multifocal, accommodative, Pseudo accommodative and extended-range IOLs? (2.5x4) J 2016
74. a) What are Multifocal IOLs? (2005)
b) What are their types and their advantages?
c) What Special Surgical Considerations will be utilized when implanting a multifocal IOL? J2014
75. What are multifocal IOL's and give principle of various types of multifocal IOL's. Give advantages and disadvantages of these IOL's. D2012
76. Discuss the principle of refractive and diffractive intraocular lenses. Give advantages and disadvantages of multifocal IOLS. J2012,2002

TORIC IOL

77. Indications, advantages, disadvantages and complications of a **toric** multifocal intra ocular lens implantation following cataract extraction. (2+3+3+2) J2015

ACCOMMODATIVE IOL

78. What is accommodative IOL and classify them with examples October 2017 FAT, J2016
79. Accommodative intraocular lenses. D2009

VISCOELASTICS



80. Broadly classify viscoelastic substances used in ophthalmic surgery. What is soft shell technique in cataract surgery and enlist important precautions while performing phacoemulsification in cases with low corneal endothelial counts. 2+(4+4) DEC 2013
81. What are viscoelastic? How do you classify them? Briefly give the indications of each and their side effects. 1+3+4+2 JUN 2013
82. Viscoelastics: Physical properties, classification, uses, side effects. Name some common ones used in ophthalmic surgery. (2008)

CATARACT SURGERY IN SPECIAL CASES

CATARACT SURGERY IN PATIENT WITH ASTIGMATISM

83. a) Evaluation of pre-existing astigmatism in a patient with cataract.
b) Various surgical methods to manage preoperative astigmatism during cataract surgery? (4+6) D2018

CATARACT SURGERY IN SO FILLED EYE

84. Principles in the management of cataract surgery post vitreoretinal surgery with silicone oil in vitreous. (10) D2016

SMALL PUPIL

85. a) Describe various surgical difficulties encountered when doing a phacoemulsification in a small pupil.
b) How do you manage a case of non-dilating pupil for phacoemulsification? J2014

LOW ENDOTHELIAL COUNT

86. Enumerate special precaution you will take while performing phacoemulsification in a patient with age related cataract who has got poor endothelial count. (4) D2013, D2009

PXE

87. What precaution you will take while operating a case of cataract in PXF syndrome by phacoemulsification. D2010

CATARACT SURGERY IN DIABETIC

88. Safe Cataract Surgery in Diabetes. (2005)

COMPLICATIONS OF CATARACT SURGERY

SECONDARY IOL

89. a) Visual rehabilitation of unilateral surgical aphakia b) Discuss problems of sulcus implantation of PCIOL 6+4 D2019(GUWAHATI)
90. Discuss secondary intraocular lens implantation with a special reference to indications, techniques and complications. (2001, 2000)

POSTERIOR DISLOCATION OF IOL

91. Complications and management of posterior dislocation of IOL 5 D2019(GUWAHATI)

PCR

92. A 70-year-old male with a normal phakic contralateral eye had posterior capsular tear in the center during a phacoemulsification procedure after removal of the cortex. Make a flowchart describing your subsequent actions, explaining why you performed each step. (10) J2019
93. What are the causes of posterior capsular rupture and how you will manage it in a phacoemulsification surgery? (5+5) J2013
94. Proper management of posterior capsular rent in cataract surgery. D2009

SIA

95. Recent advances in management of postoperative astigmatism, (10) J2019
96. What are the factors affecting the SIA (Surgery Induced Astigmatism)? How do you manage these cases having pre-operative astigmatism during the surgery for cataract? (5+5) J2013
97. Discuss details of management of astigmatism at the time of cataract surgery by phacoemulsification. (2006)

DISLOCATED NUCLEAR FRAGMENTS

98. Management of dislocated nuclear fragments after phacoemulsification in a 65-year-old male presenting one month after surgery. (10) D2016



99. Do and don'ts in management of posterior dislocation of nucleus in phaco surgery. (2010)

ZONULAR DIALYSIS

100. How will you diagnose and manage a case of intra operative zonular dialysis during cataract surgery? (3+7) D2015

CAPSULAR BLOCK SYNDROME

101. What is capsular block syndrome? Classify capsular block syndrome with respect to early, intraoperative and late causes. How are they avoided and/or managed? D2012

PCO

102. Describe intraoperative and postoperative methods to reduce posterior capsule opacification. J2009,2001

CASES

103. An 80-year-old retired school teacher with Parkinsonism and modest visual demands was operated for cataract in the right eye and she has a postoperative error of +5 diopter in the first week. Her contralateral eye is pseudophakic and has good uncorrected postoperative vision with which she is satisfied. The current surgery was uncomplicated.

a) Discuss various options for further management of the patient.

b) How would you decide on the best course of action? (5+5) J2019

104. A 60-year-old diabetic male presented with sudden onset diminution of vision one week after uneventful cataract surgery. Give differential diagnosis and management algorithm. (4+6) D2016

105. A 76-Year-old individual underwent phacoemulsification for grade 4 cataract. He received incompletely and developed diminution of vision 6 weeks after surgery. Discuss the causes of diminished vision and their management in brief. J2014

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IV. GLAUCOMA

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



GLAUCOMA

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 methods 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 /HEMORRHAGE /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



V. UVEA AND SCLERA

A) UVEA

1. Anatomy
2. Drugs
 - a) Immunosuppressant/ biologics/antimetabolites
 - b) Steroids
3. Anterior uveitis
 - a) FUS
 - b) JIA
 - c) Uveitis in Nephritis
4. Parsplanitis/ intermediate uveitis
5. VKH
6. SO
7. Sarcoid uveitis
8. Bechet's disease
9. Parasitic uveitis
 - a) Toxoplasmosis
 - b) Cysticercosis
10. Viral uveitis
 - a) HIV
 - b) CMV
11. Bacterial uveitis
 - a) TB
 - b) Leprosy
12. Panuveitis
13. Masquerade syndrome
14. White dot syndrome
 - a) Serpiginous choroidopathy
 - b) ARN
15. Miscellaneous

B) SCLERA

1. Scleritis



A) UVEA

ANATOMY

1. Blood supply of choroid, ciliary body and iris. (3+3+4) D2016
2. a) Anatomy of ciliary body with the help of diagram(s). b) Process of aqueous production and various factors that influence it. [3+(4+3)] D2015
3. Structure and anatomy, embryology and management of congenital abnormalities of iris. (3+3+4) D2014
4. Essential Iris atrophy. (2001)
5. Write briefly about Aniridia. (2006)

DRUGS

IMMUNOSUPPRESSANTS/BIOLOGIS/ANRIMETABOLITES

6. a) Role of HLA in diagnosis of uveitis. b) What are the latest immunosuppressants used in treatment of uveitis? Discuss their mechanism of action advantages and disadvantages. (5+5) D 2019 (GUWAHATI)
7. Role of biological agents in management of patient with bilateral chronic uveitis 10 J2019
8. a) Role of immunosuppressive drugs in ophthalmic conditions. b) Enumerate the commonly used drugs with their dosage and complications. [4+(4+2)] D2017, J2019
9. What is the pharmacological mechanism of action of cyclosporine? What are its clinical uses in ophthalmology? (5+5) D2014
10. Discuss role of anti-metabolites and immunosuppressive drugs in Ophthalmology. (10) D2011
11. Cyclosporine- mechanism of action and clinical use in ophthalmology. J2010
12. What are immunosuppressive agents? Give broad classification and enumerate their clinical indication in ophthalmology. J2010,2007,2002,2000
13. What are biological immunosuppressive. Name few of them, as used in management of uveitis. J2009
14. Describe indication, contraindications, mechanism of action and complication of immunomodulatory agents in ophthalmology. (2008)
15. Various immunosuppressive used in resistant cases of posterior uveitis. (2010)

STEROIDS

16. What are the indications and modes of application of periocular steroids? What are their advantages and complications and what steps can be taken to prevent them? [(2+2) +(2+2+2)] D2015
17. a) Indications, routes of administration, dosage schedule and complication of steroids in uveitis.
b) Role of alternative drugs used in uveitis. [(2+2+2) +2] J2015
18. Techniques, role, indications and advantages or disadvantages of periocular and intraocular steroids. (2+2+2+4) D2014
19. Name few intraocular steroid implants approved by FDA and mention its indications, contraindications and side effects. (2010)
20. Preparations, dosage, routes and indications of steroids in uveitis. (2008)
21. Steroid Pulse therapy. (2003)

ANTERIOR UVEITIS

22. What are the various clinical feature and complications of acute attack of an acute uveitis? Discuss its management. (2+3+5) J2013
23. Management of AAU D2009.2000,1999

FUS

24. a) Causes of heterochromia iridis.
b) Clinical features and management of Fuch's uveitis syndrome. (2+4+4) D2018, 2000
25. a) Differential diagnosis of heterochromia iridis. b) Features, complications and management of a case of Fuch's Uveitis Syndrome. (2+8) J2015
26. Write short note on Fuch's heterochromic cyclitis. J2009
27. Etiology, clinical features and management of Fuchs' heterochromic uveitis. (2009) (2008)

JIA

28. Juvenile Idiopathic Arthritis — Ocular manifestations and management. 4+6 D2019
29. What are the types, ocular clinical features and differential diagnosis of a case of juvenile idiopathic arthritis? (3+4+3) J2016
30. Differential diagnosis and management of a 10-year-old boy presenting with bilateral diminution of vision and swelling of the right knee. (5+5) J2015



31. What are the common causes of anterior uveitis in children? What are the common clinical presentations and management of Juvenile Spondyloarthritis? 4+(4+2) D2013
32. Discuss clinical features, diagnosis, complications and management of uveitis associated with juvenile rheumatoid arthritis. J2012

UVEITIS IN NEPHRITIS

33. Clinical presentation and management of nephritic conditions causing uveitis. (2008)

PARS PLANITIS/ INTERMEDIATE UVEITIS

34. Clinical features and management of intermediate uveitis. (4+6) D2016
35. Discuss pathogenesis, clinical features, diagnosis, differential diagnosis and management of intermediate uveitis. D2012
36. Describe signs and symptoms, management of pars planitis. D2010
37. Pars planitis. (2005) (2000) (1999)

VKH

38. Discuss in detail about Vogt-Koyanagi Harada syndrome. (10) D2011
39. VKH Syndrome. (2005) (2001)

SO

40. a) What is sympathetic ophthalmitis? How will you evaluate and manage b) what is the differential diagnosis of an iris nodule? (2+2+3) +3 D2019 (GUWAHATI)
41. A 30-year-old female got up at night with severe pain and watering in left eye. She gave history of a nail injury to her eye 1 year back. How would you approach and manage such a case? (10) J2016
42. Immunological Considerations in Sympathetic Ophthalmitis. (2007)
43. Sympathetic Ophthalmitis (2000)

SARCOIDOSIS

44. Clinical features, investigations and management of ocular sarcoidosis. (3+3+4) D2017
45. Ocular manifestations of sarcoidosis. D2009
46. Describe clinical picture, management and sequel of sarcoid uveitis. J2009

BEHÇET'S DISEASE

47. A 30-year-old male presented with genital lesions and complained of sudden diminution of vision in one eye followed 6 weeks later by similar diminution in the other eye. What are the possible diagnoses? Give broad guidelines in the management of each situation. (2+8) D2015
48. Write the ocular manifestations, systemic associations and management of Bechet's disease including recent drugs available for treatment. (3+1+6) D2013

PARASITIC UVEITIS

TOXOPLASMOSIS

49. Clinical features and management of cases of CMV retinitis and toxoplasmic retinitis. (5+5) J2017
50. Discuss pathophysiology and management of ocular toxoplasmosis. (7 + 3) J2013
51. Discuss toxoplasmosis. (10) D2011
52. Etiology, clinical features and treatment of ocular toxoplasmosis. (2008)

CYSTICERCOSIS

53. Clinical feature, evaluation and management of ocular cysticercosis. (2+3+5) D2018
54. Clinical features, diagnosis and management of intra-ocular cysticercosis. (3+3+4) D2016
55. Discuss clinical features, diagnosis and management of intraocular and extraocular cysticercosis (3+3+ 4) J2013
56. Write in brief on ocular involvement in ocular Cysticercosis and briefly outline the management of ocular cysticercosis. D2012
57. Write down modern management of posterior segment intraocular cysticercosis. D2010
58. Clinical features and management of intraocular cysticercosis. (2008) (2005) (2003) (2001)



VIRAL UVEITIS

HIV

59. Diagnosis and features of HIV retinopathy and its relationship with CD4 counts. (5) J2018
60. Write about ocular manifestations of HIV and their relation to CD4+ cell. What is the impact of highly reactive anti-retroviral therapy on ocular effects of HIV? October 2017 FAT
61. Discuss in detail the ocular manifestations of AIDS. (10) J2013
62. What are the ocular features of HIV disease? What is the impact of HAART on ocular features? D2014
63. Ocular manifestation of AIDS. Its differential diagnosis and treatment. (2008)
64. Describe the ophthalmic manifestations of HIV infection. (2007) (2004) (2002) (2002)
65. Ophthalmic manifestations of AIDS and their management. (2006)

CMV

66. Describe clinical features. Treatment and prognosis in case of Cytomegalovirus Retinitis. J2013
67. Clinical features, investigations, treatment and prognosis in a case of CMV retinitis. (2+2+4+2) D2018
68. Management of CMV Retinitis. (2005)
69. Cytomegalovirus Retinitis - clinical features, management, prognosis. (2008)

BACTERIAL UVEITIS

TB

70. Clinical features, diagnostic investigations and management of ocular tuberculosis. (2+4+4) J2017,2004

LEPROSY

71. Enumerate the various ocular manifestations of Hansen's disease. (4) J2019,2003

PANUVEITIS

72. Give the systemic associations of pan uveitis. (2003)

MASQUERADES

73. Clinical features, Investigations and treatment of a case of primary intraocular lymphoma. (2+3+5) D2018
74. Presentation, systemic features, investigations and treatment of primary intraocular lymphoma. (2+2+3+3) J2015
75. Name the common syndromes that masquerade as anterior and posterior uveitis and their diagnostic tests. (5+5) J2010
76. Masquerade Syndrome. (2005)

WHITE DOT SYNDROME

77. a) Differential diagnosis of White dot syndromes. b) Clinical features, evaluation and management of Serpiginous Choroidopathy. (3+7) J2019

SERPIGINOUS CHOROIDOPATHY, ARN

78. What is the presentation, clinical features and management of a case of serpiginous choroidopathy? (2+4+4) J2016
79. Clinical signs and treatment of acute retinal necrosis. (2008)
80. Describe retinal necrosis syndrome. (2003)

MISCELLANEOUS

81. a) Enumerate causes of iris cysts b) Discuss briefly management of different types of iris cysts (3+7) J2018
82. Differential diagnosis and management of a 47year old female patient presenting with unilateral hazy vitreous. (5+5) D2015
83. Nodules of the iris. (2005)
84. Investigations of uveitis. (2003) (2003)
85. Describe ocular onchocerciasis. (2002)
86. Endogenous uveitis. (2002)
87. Describe ocular onchocerciasis. (2002)
88. Endogenous uveitis. (2002)
89. Current concepts in management of uveitis. (1999)



B) SCLERA

SCLERITIS

90. a) Etiopathogenesis and clinical features of necrotizing scleritis.
b) Evaluation and management of necrotizing scleritis. (5+5) D2018
91. a) Classification of scleritis. b) Clinical features, investigation and management of scleritis. [2+(2+3+3)] J2017
92. a) Clinical features and types of anterior and posterior scleritis. b) How will you investigate a case of scleritis?
c) Management of necrotizing scleritis. (4+4+2) J2015
93. Classify scleritis. Discuss clinical manifestations, investigations and management of scleritis and its complications. J2012
94. Classification and brief clinicopathological profile of scleritis. (4+6) J2011
95. Investigations, etiology and management of a case of necrotizing scleritis. J2009
96. Scleritis and its management. (2006)
97. Scleritis. (2004) (2003) (2001)

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VI. RETINA, VITREOUS AND CHOROID

A. Retinal vascular disorders

1. Anatomy
2. Diabetic retinopathy
 - a) NPDR
 - b) PDR
 - c) Macular edema
3. Retinal vein occlusion
 - a) BRVO
 - b) CRVO
4. Retinal artery occlusion
 - a) CRAO
 - b) OIS
5. Hypertensive retinopathy
6. Pregnancy related hypertensive retinopathy
7. ROP
8. Coats disease
9. Eales disease
10. Radiation retinopathy

B. Acquired macular disorders

1. Anatomy
2. Investigations
 - a) Macular function tests
 - b) FFA
 - c) ICG
 - d) OCT
 - e) OCTA
3. Macular degeneration
 - a) ARMD
 - b) CNVM
 - c) IPCV
4. Vitreomacular interface disorders
 - a) ERM
 - b) Macular hole
5. CSR
6. Submacular hemorrhage
7. Macular surgeries
8. Other macular disorders

C. Hereditary Fundus Dystrophies

1. Anatomy
 - a) RPE
 - b) Rods and cones
2. Investigations
 - a) VEP
 - b) ERG
 - c) EOG
 - d) Electronystagmometry
3. RP
4. Retinoschisis
5. Bionic eye

D. Retinal Detachment

1. Anatomy



2. Investigations
 - a) USG
3. Peripheral retinal degenerations
4. Retinal tears and breaks
5. GRT
6. Retinal Detachment
 - a) RRD
 - b) TRD
 - c) ERD
7. Retinal detachment surgery
 - a) Vitrectomy
 - b) Scleral buckle
 - c) SRF Drainage
8. Vitreous substitutes
 - a) Air
 - b) Gas
 - c) Silicon Oil
 - d) PFCL

E. Drugs and LASER

1. Intravitreal drugs
 - a) Steroids
 - b) Anti- VEGF agents
2. Retinal LASERS
 - a) Retinal Micropulsed LASER
 - b) PDT
 - c) TTT

F. Vitreous and choroid

1. Vitreous
 - a) Vitreous hemorrhage
 - b) Terson's syndrome
 - c) PHPVAsteroid hyalosis
2. Choroid
 - a) Choroidal coloboma
 - b) Choroidal effusion

G. Tumors of retina and choroid

1. Retinoblastoma and DD of leukocoria
2. Vascular retinal tumors
3. Choroidal osteoma

H. Trauma and endophthalmitis

1. Trauma
2. IOFB
3. Siderosis bulbi
4. Endophthalmitis and Case



A) RETINAL VASCULAR DISORDERS

ANATOMY

RETINA

1. a) Draw a labelled diagram of cut section of the retina b) Describe the importance of Ganglion cells and Muller cells c) Explain how the rods and cones are distributed in the retina 5+3+2 D2019(GUWAHATI)
2. a) Anatomy and blood supply of retina. (4+4+2) J2019
b) Anatomy and histology of macula.
c) Enumerate macular function test.
3. Draw diagram (s) depicting the anatomy of retina. D2009
4. Name the layers of retina. Briefly outline the structure of retinal receptor cells. (2006)
5. Nerve fibre arrangement in Retina. (1999)

RETINAL VASCULAR DISEASE

DIABETIC RETINOPATHY

6. a) Pathogenesis and sequelae of cotton wool spots and hard exudates in retina in diabetic retinopathy. (5) J2018
7. What are the 3 landmark studies in establishing management protocols in Diabetic retinopathy? What are the conclusions of each of them? [1+ (3+3+3)] D2013
8. Classify diabetic retinopathy giving features of each category and outline of management. 5+5 J2011
9. Role of glycosylated Hb, blood pressure and blood cholesterol in prevention and management of diabetic retinopathy. J2009
10. Relevance of various clinical trials in diabetes and eye-their contribution in current management of diabetes complications in the eye. (2008)
11. Describe the pathogenesis, classification, clinical picture and treatment of diabetic retinopathy (2003,2002, 2000, 1999)
12. Medical Management of Diabetic Retinopathy. (2001)

NPDR

13. a) Investigations and assessment of a case of long-standing diabetes with moderate non-proliferative diabetic retinopathy with clinically significant macular edema. b) How will you manage such a case? (4+6) J2015

PDR

14. Ocular management of a 50-year-old diabetic patient including medical, surgical and Laser treatment who has 3/60 vision and proliferative diabetic retinopathy in both eyes. (10) J2019
15. A 65-year-old diabetic man presents with painless diminution of vision with vitreous haze. How will you investigate and treat him? (5+5) J2016
16. Indications and contraindications of Intravitreal Avastin in PDR. (2010)
17. Discuss the Indications of Vitrectomy in a Patient with Longstanding Diabetes Mellitus. How will you deal with concurrent cataract? (2007)
18. Discuss the management of a diabetic patient with evidence of proliferative diabetic retinopathy and advanced cataract. (2006)
19. Etiopathogenesis of neovascularization of iris, its impact and management. (2004,2001)
20. Etiopathogenesis of neovascularization of retina, its impact and management. (2002)

MACULAR EDEMA

21. Diagnosis and management of non-resolving diabetic macular edema. (5+5) D2017
22. Pathogenesis, clinical features, diagnosis and management of various types of diabetic macular edema. (2+2+2+4) J2017
23. a) Pathogenesis of diabetic macular edema. b) Various modalities of treatment available for treatment of diabetic macular edema. (5+5) J2016
24. Discuss the role of Lasers in diabetic macular edema. Outline complete plan of management in severe diabetic macular edema. What is the role of newer Lasers in management of diabetic macular edema? (5+2+3) D2014
25. Discuss clinical features, classification, investigations and management of diabetic macular edema. (3+2+2+3) D2013
26. How you will diagnose diabetic macular edema? Discuss its investigation and management. (2+3+5) J2013
27. Define clinically significant macular edema, high risk PDR and management of these conditions. D2012,2000
28. Discuss etiology, clinical features and management strategies for diabetic macular edema (3+3+4) D2011
29. Classify diabetic macular edema and methods to classify it and its clinical relevance. D2010
30. Management of diffuse diabetic macular edema with visual acuity less than 6/60 in both eyes. D2009
31. Define clinically significant macular edema in diabetic retinopathy. Discuss its pathophysiology and management. (2008)

32. Cystoid macular edema: pathophysiology, diagnosis and treatment. (2006,2005)
33. Write on diabetic maculopathy. (2003)

RETINAL VEIN OCCLUSIONS

34. Clinical features, diagnosis and management of retinal vein occlusions. (2+3+5) D2016
35. Management of macular edema following retinal vein occlusion. (10) D2015
36. What is the role of intraocular corticosteroids in retinal vein occlusions? Discuss the findings of SCORE and Posurdex trial in venous occlusions. [4+(3+3)] D2013

CRVO

37. Etiopathogenesis, clinical features, investigation and management of central retinal vein occlusion. (2+2+2+4) J2017
38. Write down management and complications of ischemic central retinal vein occlusion. J2009
39. CRVO- Changing trends in management. (2005)
40. Discuss the management of central retinal vein occlusion (CRVO). (1999)

BRVO

41. a) CF of early & late branch vein occlusion b) Results of important trials in management of BRVO 4+(3+3) J2018
42. Describe clinical features, etiology, investigations and various modalities of management in branch retinal vein occlusion. J2012
43. Clinical signs and management of branch vein occlusions. D2010
44. Management of branch retinal vein occlusion. D2009,2005

RETINAL ARTERY OCCLUSIONS

CRAO

45. Etiopathogenesis, clinical features, investigations and management of central retinal arterial occlusion. 2+2+3+3 D2017
46. Types of retinal artery obstructions, DD and its causes and management. 5+5 J2011,2004

OIS

47. Ocular ischemic syndrome. Describe clinical features, etiology, differential diagnosis & management. (2008)

HYPERTENSIVE RETINOPATHY

48. Hypertensive retinopathy. J2010,2002
49. Describe features of Hypertensive Retinopathy. D2009
50. Classification of hypertensive retinopathy. (2000)

PREGNANCY RELATED HTN RETINOPATHY

51. Pathogenesis, clinical features, diagnosis and management of different grades of retinopathy in pregnancy induced hypertension. (2+2+3+3) D2017
52. A 34-year-old pregnant lady presents with sudden bilateral loss of vision. What are the likely causes? How will you treat them? (5+5) D2015
53. Ocular changes in pregnancy induced hypertension. (2005)

ROP

54. Risk factors, classification and management of Retinopathy of Prematurity (ROP). (2+3+5) D2019
55. Etiology, evaluation, classification and management of retinopathy of prematurity. (2+2+3+3) D2017
56. Risk factors, classification and management of retinopathy of prematurity. (2+4+4) D2016
57. Describe the clinical characteristics and staging of retinopathy of prematurity (ROP). Write the criteria for its screening with management principles. D2012
58. Describe staging, risk factors and outline management principles of retinopathy of prematurity. (4+2+4) D2011
59. How is retinopathy of prematurity classified indicating the indications & principles for therapy? (10) J2011
60. Retinopathy of prematurity. J2010
61. Management of retinopathy of prematurity. D2009
62. Screening of a case of retinopathy of prematurity. J2009

COAT'S DISEASE

63. Clinical features, differential diagnosis and management of a case of Coat's disease. (2+4+4) J2015



EALS DISEASE

64. Describe etiology, clinical features and management of Eales disease. (2+4+4) D2011

RADIATION RETINOPATHY

65. Radiation Hazards in the eye. (2001)

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B) ACQUIRED MACULAR DISORDERS

ANATOMY

66. a) Anatomy and development of the macula. b) Different zones of macula and their clinical importance. c) Enumerate the macular function tests. [4+(2+2) +2] J2015
67. Discuss the anatomy of macula. Enumerate relevant points of difference of retinal anatomy at macula and peripheral retina. J2012
68. Describe anatomy of macula of retina. Support your answer with suitable diagrams. (10) D2011

INVESTIGATIONS

MACULAR FUNCTION TEST

69. How will you evaluate visual function in a patient with opaque media? (10) D2011
70. Various macular function test. J2010
71. Macular function tests. D2009
72. Discuss recent advances in assessment of retinal functions. (2003)
73. Describe the assessment of macular functions in case of opaque media. (2002)

FFA

74. a) Causes of hyperfluorescence and blocked fluorescence in Fluorescein Angiography b) Fluorescein Angiography features in CSR (5+5) J2018
75. Discuss the immediate management of a 60-year-old diabetic patient who has collapsed after injection of dye during FFA. J2012
76. Fluorescein angiography - principle and clinical application. (2008,2003,2000)

ICG

77. Comment on Indo cyanine green (ICG) angiography and its diagnostic use. (2005, 2003, 2003, 2001,1999)

OCT

78. Note on OCT angiography, Mechanism of action, algorithm used, clinical applications, advantages and limitations (10) October 2017 FAT
79. a) Principle of optical coherence tomography. b) Indications of use of above modality in different ocular conditions. c) Recent advances in OCT. (2+5+3). J2017
80. What is OCT? What are its advantages over conventional imaging? Name the conditions where it helps in precise diagnosis? (2+6+2) J2016
81. Enumerate the uses of optical coherence principle in Ophthalmology. What equipments are based on this principle and their advantages? 5+5 D2015
82. What are the recent advances in choroidal assessment on OCT? In which situations has it been applied? 7+3 D2015
83. Discuss the principles of optical coherence tomography (OCT). What are the types of OCT? Mention indications of its use. (4+2+4) D2014
84. What is the principle of Optical Coherence Tomography? What are the types of OCTs available? What are the diagnostic and therapeutic issues of OCT in management of macular pathology? 2+2+ (3+3) D2013
85. What is the principle of Optical Coherence tomography? What are its uses in corneal and retinal diseases? (2+4+4) J2013
86. Method of assessment of macular thickness. J2010
87. Role of OCT in retinal disease, diagnosis and management. (2010, 2007, 2006, 2005)

OCTA

88. OCTA - Principle and clinical applications. (5+5) D2019

MACULAR DEGENERATION

89. Clinical Picture of hereditary macular degeneration and its mode of inheritance. J2009
90. Pathology of various age-related macular lesions. 10 J2016

ARMED & CNVM

91. Describe management options for a 60-year old patient suffering from age related macular degeneration with visual acuity of 3/60 in both eyes. Discuss options for visual rehabilitation of patient. (5+5) J2019
92. Pathology of dry and wet age-related macular degeneration. (5+5) D2014

93. Describe the clinical features and clinicopathologic correlation of age-related macular degeneration (ARMD). Describe the role of various modalities in the management of ARMD. D2012
94. Causes, pathogenesis and principles of management of choroidal neovascular membrane (CNVM). (3+3+4) J2011, 2003,2001,1999
95. Describe MARINA & FOCUS Trails in the management of Wet ARMD. J2009

IPCV

96. Clinical features, diagnosis, differential diagnosis and management of idiopathic polypoidal choroidal vasculopathy. (2+2+2+4) D2016

VITREOMACULAR INTERFACE DISORDERS

ERM

97. a) What is an epiretinal membrane (ERM)? b) Causes of ERM and their management. [2+(4+4)] J2015

MACULAR HOLES

98. a) Pathophysiology, evaluation and management of full thickness macular hole. b) Factors prognosticating the treatment outcome. (7+3) D2019
99. Macular hole- its causes, grading & management (3+3+4) J2018
100. Write the causes, clinical features, diagnosis and surgical management of macular holes. D2012
101. Etiology, methods of evaluation and management of macular hole. (3+3+4) D2017
102. a) What are the causes of macular hole? b) How will you investigate, prognosticate and manage a case of Idiopathic macular hole? 2+(3+2+3) J2016
103. Macular Hole-classifications, stages, etiopathogenesis. Briefly enumerate the various investigations to confirm and prognosticate macular hole (2003,2002,2001,1999)

CSR

104. What are the current management options available for a case of chronic central serous chorioretinopathy? (10) J2019
105. A patient present with central unilateral metamorphopsia. Discuss differential diagnosis, evaluation and management of such a case. (3+3+4) D2018
106. Recent advances in diagnosis, pathogenesis and management of central serous retinopathy. (2+4+4) D2015,2003,2000

SUB-MACULAR HEMORRHAGE

107. Evaluation and management of traumatic sub-retinal hemorrhage over the macula. (10) D2018

MACULAR SURGERIES

108. Indications, advantages and disadvantages of internal limiting membrane (ILM) peeling in vitreoretinal surgery. (2+4+4) J2015
109. Macular Translocation. (2004)
110. Recent advances in management of macular diseases. (2002)

OTHER MACULAR DISORDERS

111. Abiotrophy of Retina. (2007)
112. Chloroquine Retinopathy. (2005)
113. Inherited macular disorders. (2002)
114. Ocular side effects of systemically administered drugs used for malaria. (2000)



C) HEREDITARY FUNDUS DYSTROPHY

ANATOMY

RPE

115. Anatomy, biochemical composition and physiological roles of retinal pigment epithelium. (4+2+4) J2016
116. Pigment epithelium and its importance in retinal integrity. (2000)

RODS AND CONES

117. a) Detailed structure of rods and cones b) Their distribution over the retina c) Implications in the vision quality with rods and cone dysfunction (6+2+2) J2018
118. a) Explain with diagram anatomy of layers of retina. b) What are the differences between rods and cones? c) What is the importance of IS-OS junction? (10) October 2017 FAT
119. a) Describe in brief the embryological evolution of retina? b) What are the differences between rods and cones? c) What is the importance of IS/OS junctions? J2014
120. Discuss physiology of visual perception. (2008)
121. Physiological Basis of Night Vision. (2005)
122. Physiology of Dark Adaptation. (2007)

INVESTIGATIONS

VEP

123. a) Genesis of visual evoked potential (VEP).
b) What are the types of VEP and enumerate the conditions for assisting in diagnosis and management of the conditions? [3+(2+2+3)] D2015
124. What is VEP? What are the types of VEP? What is the role of VEP in modern clinical practice? What are its limitations? [(2+2+4+2)] D2014
125. Write short note on Visual Evoked Potential. (2006) (2002)

ERG & EOG

126. a) Electrophysiological basis of Electroretinography (ERG) and Electro-oculography (EOG). (5+5) D2018
b) Clinical applications of ERG and EOG
127. a) Principles, role and uses of ERG. b) Multifocal ERG and its importance. [(2+3+3) +2] J2015
128. What is ERG? Mention various types of ERG and their uses in ophthalmology. D2010
129. Describe electroretinography. D2009, 2003

ELECTRONYSTAGMOGRAPHY

130. Electronystagmography. (1999)

RP

131. Discuss the molecular genetics, clinical features, tests of visual functions in typical Retinitis Pigmentosa. 2+4+4 D2013

RETINOSCHISIS

132. Discuss clinical features and diagnostic tests to differentiate between retinoschisis and retinal detachment. D2012
133. What is the difference between retinoschisis and retinal detachment? Discuss the various types of retinoschisis and its management. 3+(4+3) D2013
134. What are the points of differentiation between retinal detachment and retinoschisis? 5 October 2017 FAT
135. Differentiating features between Retinoschisis and Rhegmatogenous Retinal Detachment. 10 D2016

BIONIC EYE

136. a) What is ARGUS II implant, its indications and success in clinical cases? b) What are the basics of selective laser trabeculoplasty? 5+5 D2019(GUWAHATI)
137. What is a Bionic Eye? What are the principles of its working and enumerate its indications? 3+(5+2) D2016
138. Development of Electronic Eye. What are the limitations? (2005)



D) RETINAL DETACHMENT

ANATOMY

139. Discuss anatomy and physiology of vitreous. Write a brief note on etiopathogenesis of posterior vitreous detachment. (4+4+2) D2011
140. Describe normal attachment of vitreous. J2009
141. Briefly describe the surgical anatomy of vitreous & its role in pathogenesis of retinal detachment. (2006)

INVESTIGATIONS

USG

142. Ultrasonic Bio-microscopy: Principles & Uses. (2005)
143. B-Scan-Indications and utility. (2002)
144. Discuss the role of ultrasonography in ophthalmology. (2001) (1999)
145. Role of Doppler in Ophthalmology. (2001)

PERIPHERAL RETINAL DEGENERATIONS

146. Describe the predisposing peripheral retinal degenerations for retinal detachment and give indications and methods of prophylaxis. (5+5) J2011
147. Name the peripheral retinal degenerations and illustrate with diagrams. (2006)

RETINAL TEARS AND BREAKS

148. A 21-year-old myopic male presented with a total retinal detachment in the right eye, a single causative break at 11 o'clock anterior to the equator and no PVR.
- a) What are the surgical options for management of retinal detachment?
- b) Explain clearly why you would recommend your chosen surgical option and outline the surgical steps. (5+5) J2019

GRT

149. a) Clinical features and differential diagnosis of various types of retinal detachment. b) Management of giant retinal tear. (6+4) J2019
150. Write clinical features and management of retinal detachment with giant retinal tear in a 22-year-old boy with Marfan's Syndrome (3+7) J2013
151. How do you classify giant retinal breaks? Describe its etiology, pre-operative evaluation and principles of management. (2+2+2+4) D2011, 2008, 1999

RETINAL DETACHMENT

RRD

152. Management of rhegmatogenous retinal detachment. J2010
153. Anatomical and functional prognostic factors in management of rhegmatogenous retinal detachment. J2009

TRD

154. Describe the causes, investigations and management in a case of "tractional retinal detachment". (3+3+4) D2014
155. Classification of PVR. (2004)

ERD

156. Etiopathogenesis and management of exudative retinal detachment. (5+5) D2017
157. Mention a differential diagnosis of various etiologies of exudative retinal detachment. (5) October 2017 FAT

RETINAL DETACHMENT SURGERIES

VITRECTOMY

158. a) What are the advantages and disadvantages of 25G or Smaller Gauge Vitrectomy Surgeries b) What are the different vitreous substitutes used in Retinal Surgeries, their advantages and disadvantages? [(2+2) + (3+3)] D2019 (GUWAHATI)
159. Write down the advantages and disadvantages of various methods of retinopexy like laser and cryopexy. Write down how you are going to do. D2010
160. Various vitreoretinal procedures. J2010
161. Factors influencing sclerotomy, sites for vitrectomy. J2009



SRF DRAINAGE

- 162.a) What is pneumatic retinopexy and its indications? b) Describe complications of scleral buckling. c) Indications and complications of subretinal fluid drainage. (3+3+4) D2019 (GUWAHATI)

BUCKLE

163. Describe complications of scleral buckling. (3) D2019 (GUWAHATI)
164. What are the principles of scleral buckling surgery for retinal detachment? What are its modern-day indications and problems? [4+(3+3)] D2015
165. Advantages and disadvantages of scleral buckling surgery versus pars plana vitrectomy for RD. (5+5) J2011
166. Principles of RD buckling surgery. D2009

VITREOUS SUBSTITUTES

167. What are the different vitreous substitutes used in Retinal Surgeries, their advantages and disadvantages? (3+3) D2019 (GUWAHATI)
168.a) Indications and procedure for use of various tamponading agents in retinal surgery.
b) Advantages and disadvantages of tamponading agents used in retinal surgery. (5+5) D2018
169. Intraocular tamponade used in vitreoretinal surgery. D2009
170. Discuss role of silicone oil and expandable gases in the management of retinal detachment. J2012
171. Chemical adjuvants, internal tamponading agents & sustained drug delivery device in Vitreo-retinal surgery. (2008)

AIR- PNEUMATIC RETINOPEXY

172. What is pneumatic retinopexy and its indications? (3) D2019 (GUWAHATI)
173. Pneumatic retinopexy-indications, Contraindications, steps of procedure & Complications. (2005,2003)

GASES

174. Use of intravitreal gases in retinal detachment surgery. (2000)

SILICON OIL

175. Discuss the role of Silicon oil in VR surgery. Describe its complications and method of removal. [4+(4+2)] D2017
176. Complications of Silicon Oil and their management. (2007)

PFCL

177. Name various vitreous substitutes. Write about PFCL (perfluorocarbon liquids). (2006)
178. Discuss the role of liquid perfluorocarbons in vitreoretinal surgery. (2004) (2003) (1999)



E) DRUGS & LASER

INTRAVITREAL DRUGS

- 179.a) Intravitreal implants & indications for use b) What is possible side effects (7+3) J2018
180.Enumerate the routes of drug delivery in eye. Mention four commonly used intravitreal drugs with their dosages and indications. D2012
181.Intravitreal injection. J2010
182.Intraocular drug implants – principal, types, uses, disadvantages. J2009

INTRAVITREAL STEROIDS

- 183.Role of intra-vitreous steroid injections. (5) D2019 (GUWAHATI)
184.What are the types, indications and complications of intraocular steroids? (2+4+4) D2013
185.Name few intraocular steroid implants approved by FDA and mention its indications, contraindications and side effects. D2010
186.Indications, complications of intravitreal steroids. J2009

INTRAVITREAL ANTI-VEGF AGENTS

- 187.a) Bevacizumab — Mechanism of action, indications and differences with other drugs of same group. b) Discuss in brief CATT 1 and CATT 2 trials. (6+4) D2019
188.a) What are various types of anti-VEGF available? b) What are their pharmacological features? C) What is their role in retinal disorders? d) What are their complications? (10) October 2017 FAT
189.What is CATT trial What were the objectives, conclusions, design & implications of trial in respect of anti-VEGF agents? (10) October 2017 FAT
190.Classify and mention briefly about different anti-VEGF agents and their uses in ophthalmology. (2+2+6) J2017
191.a) What are the various Anti VEGF intra-vitreous agents being used? b) What are the indications for their use and highlight their side effects? [3+(3+4)] D2016
192.a) What is VEGF-Trap? b) What are its advantages over the current anti-VEGF agents? (5+5) J2016
193.Discuss the CATT trial. What were the objectives, design, conclusions and implications of the trial in respect of anti-VEGF agents? [2+(2+2+2+2)] D2014
194.a) What are the various types of anti-VEGF agents available?
b) What are their pharmacological features?
c) What is their role in retinal disorders?
d) What are their complications and Limitations? J2014
195.Indications and contraindications of Intravitreal Avastin in PDR. D2010
196.VEGF - Define, source in eye, their role in disease and their modulation. (2008)

RETINAL LASER

MICROPULSED RETINAL LASER

- 197.What is micropulsed retinal laser? What is the change in concept of application of lasers in a micropulsed design and what are its advantages? [3+(3+4)] J2017

PDT

- 198.Write in brief about PDT (10) October 2017 FAT
199.Principles, technique, indications, and complications of photodynamic therapy. (2+3+3+2) D2015

TTT

- 200.TTT (2004)



F) VITREOUS AND CHOROID

VITREOUS

VITREOUS HEMORRHAGE

201. Discuss the differential diagnosis of vitreous hemorrhage. Also discuss investigations and management. (2008) (2005) (2002)

TERSON'S SYNDROME

202. a) What is Terson's Syndrome?
b) What are its Clinical Features?
c) Discuss its differential diagnosis.
d) Describe the complications and their management J2014

PHPV

203. Write brief note on Etiopathogenesis & management of a case of persistent primary vitreous. (10) October 2017 FAT
204. a) Development of vitreous. b) What is persistent hyperplastic primary vitreous? c) Diagnostic features and differential diagnosis of persistent hyperplastic primary vitreous. [3+2+(3+2)] D2016
205. a) Embryology of development of vitreous.
b) How does one diagnose and manage PHPV? [4+(2+4)] D2015

ASTEROID HYALOSIS

206. Write short note on Asteroid hyalosis. (2006)
207. Asteroid hyalosis. (2000)

CHOROID

CHOROIDAL COLOBOMA

208. a) What is optic disc pit? What is its latest treatment? What is Ida Mann classification of fundal coloboma (3+3) +4 D2019 (GUWAHATI)
209. Describe briefly anatomy of choroid. Discuss the developmental basis of choroidal coloboma. Classify types of choroidal colobomas. D2012

CHOROIDAL EFFUSIONS

210. Classification and diagnosis of choroidal effusions. 5+5 D2016



G) TUMORS OF RETINA AND CHOROID

RB/LEUKOCORIA

- 211.a) Current concepts in management of retinoblastoma. (5) D2019 (GUWAHATI)
- 212.a) Genetics of retinoblastoma. b) Histopathology of retinoblastoma (5+5) D2019
- 213.A 10-year-old child with complaints of blurring of vision and whitish opacities in both eyes is brought to OPD. Discuss differential diagnosis and management of this case. (5+5) J2019
- 214.a) Intra-arterial chemotherapy for retinoblastoma. b) Uses of botulinum toxin in the eye. (5+5) J2019
- 215.Indications, procedure, advantages and disadvantages of chemo-reduction for retinoblastoma. (2+3+5) D2018
- 216.Newer advances in management of 2 DD unilateral retinoblastoma in the presenting eye and when presenting in fellow eye in bilateral retinoblastoma. (5+5) J2018
- 217.a) Management of a 2-disc diameter raised retinoblastoma in a 3-year-old child. b) Recent advances in the management of retinoblastoma. (7+3) J2017
- 218.A 6-year-old boy presents with unilateral leukocoria. What is the differential diagnosis and describe management of its most common cause? (4+6) J2016
- 219.Discuss the differential diagnosis of retinoblastoma. Discuss the factors which affect the genetic counseling for patients of retinoblastoma. J2014
- 220.Give the international classification of retinoblastoma. Discuss the management of retinoblastoma with recent advances in detail. D2012
- 221.Discuss differential diagnosis of Leukocoria. (10) D2011
- 222.Describe the common causes of leukocoria. What is retinoblastoma gene and inheritance? (8+2) J2011
- 223.Write down modern histopathology classification of Retinoblastoma and give its clinical significance and effect on management. D2010.
- 224.Write down prevalence of various forms of retinoblastoma. How will you counsel a parent with one child having a retinoblastoma? D2010
- 225.Pathology of retinoblastoma J2010, D2009
- 226.Genetics and inheritance of retinoblastoma, counseling. J2009,2006,2005
- 227.Discuss the differential diagnosis of leukocoria in an eight months old child. Describe in brief various modalities for treatment of retinoblastoma. (2003)
- 228.Radiological findings in Retinoblastoma. (1999)

Vascular retinal tumors

- 229.What are the various vascular retinal tumors? Briefly discuss presentation, diagnosis and management of any 2 of them. [2+(4+4)] D2015

Choroidal melanoma

- 230.Classification, clinical features, diagnosis and management of choroidal melanoma. (2+2+2+4) D2019, J2017
- 231.a) Pathology of choroidal melanoma. b) What are its adverse prognostic factors? 5+5 D2015
- 232.Pathology, different diagnosis, adverse prognostic factors and non-surgical management of a case of choroidal melanoma. (2+2+2+4) J2015
- 233.a) Enumerate the differential diagnosis of a pigmented iris lesion. b) Write a short note on histopathology of choroidal melanoma. J2014
- 234.Describe the pathology of "malignant melanoma of choroid". How does the pathology influence the prognosis? 10 D2013
- 235.Write about clinical presentation, investigations, histopathology and management of choroidal melanoma. (2+3+2+3) D2011



H) TRAUMA AND ENDOPHTHALMITIS

TRAUMA

- 236.a) Enumerate the various consequences of a closed globe injury by a blunt object.
b) How would you distinguish between open globe and closed globe injury? (6+4) J2019
237. Evaluation and management of a case presenting with iridodialysis. (4+6) D2018
- 238.a) Posterior segment complications in a case of blunt trauma to the eye.
b) How will you manage them? (5+5) J2015
239. Discuss all the possible ocular injuries with a cricket ball to the eye in 20-year-old male. Give management of traumatic retinal disorders. (5+5) J2013
240. Classify globe injuries and describe the injuries in the anterior segment after a closed globe injury. (10) J2011
241. Write down posterior segment complication of blunt trauma which can affect vision. D2010
242. Classify globe injuries and describe the injuries in the anterior segment after a closed globe injury (2009)
243. Classify ocular injuries. Outline the factors responsible for onset of sympathetic ophthalmitis. (2006)
244. Choroidal injuries in blunt ocular trauma. (2001)

IOFB

245. Discuss the management of metallic intraocular foreign body. What are the ophthalmological effects if it is not removed? (5+5) D2013
246. Discuss clinical features, investigations, sequelae and management of intraocular metallic foreign body. J2012
247. Diagnostic challenges of retained intraocular foreign body. (2005)
248. Give the clinical diagnosis of retained intraocular foreign body & its management. (2003)
249. Localization of intraocular foreign body. (2000) (2000) (1999)

SIDEROSIS BULBI

250. Siderosis bulbi CF, Erg changes (7+3) J2018
251. Localization, management & complications of retained intraocular copper foreign body. (2008)
252. Siderosis Bulbi - Clinical picture management of retained intraocular metallic foreign body. Surgical steps of retained retinal foreign body removal. (2008)
253. Siderosis Bulbi. (2006)

ENDOPHTHALMITIS

254. Discuss etiopathogenesis and current concepts in management of acute post-operative endophthalmitis (4+6) D2019(GUWAHATI)
- 255.a) Investigations and management of cluster endophthalmitis. b) Differences between TASS and endophthalmitis. (6+4) D2019
- 256.a) Enumerate the microbiological techniques available to diagnose and identify the cause of intraocular infection. b) Discuss the advantages and disadvantages of each technique. (5+5) J2019
257. Clinical features, causes, evaluation and management of a case endophthalmitis, six weeks after cataract surgery. (2+2+3+3) D2018
258. Enumerate findings of endophthalmitis vitrectomy study. Classify endophthalmitis on basis of etiology. (10) October 2017 FAT
259. Management of a case of suspected endophthalmitis 8 days following uncomplicated cataract surgery. (10) October 2017 FAT
260. Clinical features, laboratory investigations and management of post cataract surgery endophthalmitis. (3+2+5) J2017
- 261.a. Discuss the microbiological profile in infective endophthalmitis with their antibiotic sensitivity profile. b. Give doses and combinations of preferred intravitreal antibiotics. c. What is the normal ocular flora? (3+3+4) D2014
262. What is endophthalmitis? What are the precautions to be taken to prevent postoperative endophthalmitis? (2+8) D2013
263. Discuss endophthalmitis-vitrectomy study with respect to aim, design and outcomes. D2012
264. What are the common organisms causing endophthalmitis after cataract? Describe the principles of treatment. (5+5) J2011
265. Management of bacterial endophthalmitis D2009
266. Discuss in detail how to collect vitreous sample for microbiological studies in endophthalmitis. J2009
267. Clinical features, differential diagnosis and management of acute post-operative endophthalmitis. (2008,2006,2004,2000,1999)



CASES

268. A 64-year-old individual presents with sudden profound unilateral loss of vision. Discuss etiology, evaluation and management. (3+2+5) D2018
269. Describe the approach to a 73-year-old male patient who complains of a profound unilateral loss of vision in one eye, followed by a similar loss on the other after 8 weeks. What is the diagnosis, clinical features, investigations and management of such a case? (2+3+2+3) D2015
270. Differential diagnosis and management of a 47-year-old female patient presenting with unilateral hazy vitreous. (5+5) D2015
271. a) Enumerate causes of unilateral profound painless loss of vision. b) How will you manage such a case in a 65-year-old male patient? (3+7) J2015
272. Investigations, diagnosis and management of a 40-year-old male patient presenting with unilateral central scotoma. (3+3+4) J2015
273. A 21-year-old myope (-2.5D) presented with sudden profound unilateral diminution of vision. Discuss the differential diagnosis, investigation and management. D2014
274. Discuss the differential diagnosis, investigations and management in a 22-year-old male with unilateral, profound and sudden diminution of vision. J2014
275. Discuss clinical features, differential diagnosis and management of metastatic endophthalmitis in a 15-year-old boy. (4+3+3) J2013
276. Approach to a patient who presented with sudden decrease in vision associated with pain and redness after phacoemulsification. J2010
277. Management of a case of pulmonary tuberculosis who developed sudden decrease of vision after one month of starting antitubercular therapy. (2009)
278. Describe three most ophthalmic emergencies requiring immediate management. D2009

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VII. PEDIATRIC OPHTHALMOLOGY

A) PEDIATRIC OPHTHALMOLOGY

1. Amblyopia
2. Pediatric cataract

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PEDIATRIC OPHTHALMOLOGY

AMBYLOPIA

1. What are the options of treatment for a case of amblyopia in a child of 10 years of age? Explain the physiology in brief. (6) D2019(GUWAHATI)
2. Classification and management of amblyopia. (5+5) D2016
3. What is amblyopia? Explain the concept of critical period in development of vision. Outline the principles of treating strabismus amblyopia. (4+3+3) D2012
4. Definition, causes, pathogenesis and classification of amblyopia. (1+3+3+3) J2011
5. Amblyopia - classification, etiopathology and management. Define its role in blindness in our country. (2008)
6. Amblyopia- its types and management. (2006) (2000) (2001)
7. Strabismic amblyopia principles of management. (2005)
8. Meridional amblyopia. (2002)

PEDIATRIC CATARACT

9.
 - a. Difference between an adult and pediatric eye.
 - b. Precautions to be observed in doing pediatric cataract surgery and why?
 - c. What is the relationship between pediatric cataract surgery and glaucoma?
 - d. Outline complete management of unilateral congenital cataract. (3+4+2+1) D2014
10. A two-year-old child presents with cataract both eyes. Discuss the possible causative factors and its management. D2013
11. Give Indications of surgery for pediatric cataract. Outline complete management and specific surgical challenges in a 2-year-old child with unilateral cataract. (3+3+4) D2012
12. Describe the intraoperative and post-operative management of a unilateral congenital cataract in a 2 years child. J2012
13. Management of unilateral congenital cataract in a 3-year-old child and its post-operative rehabilitation. D2010
14. Management of unilateral congenital cataract J2010
15. Management of unilateral congenital cataract in a 3-year child. D2009



VIII. STRABISMUS

1. Esodeviation
 - a) Microtropia
 - b) Accommodative esotropia
 - c) Infantile esotropia
2. Exotropia
3. CDDD- Duane's retraction syndrome
4. Brown syndrome
5. AV Pattern strabismus
6. Paralytic strabismus
 - a) III NP
 - b) IV NP
 - c) VI NP
7. Gaze palsy
8. Nystagmus
9. Miscellaneous

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STRABISMUS

ANATOMY OF EOM

1. Attachments of extraocular muscles in relation to its primary and secondary functions. (2000)
2. Describe the surgical anatomy of extraocular muscles. (1999)

ESODEVIATION

ESOTROPIA

3. a) Classify esotropia.
b) How would you plan the management of convergence excess esotropia in a 5-year-old child?
4. c) Describe the choice of procedure and surgical planning in detail. (2+4+4) J2019
5. Classify and give complete management of esotropia (10) October 2017 FAT
6. Classification and management of esotropia in children. (4+6) J2017
7. a) Define and classify esotropia.
b) Management of a 6-year-old patient with esotropia. [(2+2) +6] J2015
8. How will you investigate a case of Convergent Squint with Nystagmus? (2006)
9. Discuss investigations of concomitant squint. (2003) (2000)

MICROTROPIA

10. What is microtropia? Discuss the types and clinical features of microtropia. D2012

ACCOMMODATIVE ESOTROPIA

11. Describe the clinical features and management of partially accommodative esotropia. D2012
12. Management of accommodative esotropia. D2009
13. Esotropia in 2 a years old-Principles and Management. (2005)
14. Convergent squint in a three years old child. (2001)

INFANTILE ESOTROPIA

15. Describe the clinical features, evaluation and management of infantile esotropia. (3+4+3) D2019
16. Classify and give complete management of esotropias in detail. (3+7) D2014
17. Describe the Clinical Features, investigations, indications and surgical management of infantile esotropia, and its post-operative complications. J2014
18. Define essential infantile esotropia? Give at least four differential diagnosis of essential infantile esotropia and give at least two differentiating features among them. (2+8) D2013
19. What are the features and differential diagnosis of infantile esotropia? When it should be operated and its prognosis for binocular single vision (BSV)? (5+5) J2011
20. Discuss management of congenital esotropia. (2002)

EXODEVIATION

21. a) What is intermittent exotropia? Describe briefly its classification and management. b) Describe Huber classification of Duane Retraction Syndrome (1+2+3) +4 D2019(GUWAHATI)
22. A 14-year-old boy is brought by his parents with occasional deviation of the eyes? Discuss differential diagnosis, evaluation and management of such a case. (2+4+4) D2018
23. Classify exotropia in children. Discuss its management. 5+5 D2017 2005
24. Classification of exodeviations. Elaborate the evaluation, diagnosis and management of exodeviation in a child of 4 years. October 2017 FAT
25. Describe the clinical features and management of intermittent divergent squint. 3+7 D2012
26. Give classification, clinical work up and management of primary exodeviation. J2010
27. Classification and management of primary divergent squint. J2009

CDDD

DUANE RETRACTION SYNDROME

28. Describe Huber classification of Duane Retraction Syndrome (4) D2019(GUWAHATI)
29. Classification and principles in the management of Duane Retraction Syndrome. (5+5) D2016
30. a) What is Duane's Retraction Syndrome?
b) Enumerate the types and describe the clinical features.



31. c) Management of a case of Duane's Retraction Syndrome with abnormal head posture. [1+ (2+3) +4] J2015
Classify congenital cranial dysinnervation disorders (CCDDs). Describe Duane's retraction syndrome and its management. J 2014
32. Duane's retraction syndrome. Classification, etiopathogenesis and management. (2008)

BROWN SYNDROME

33. a) How will you diagnose and manage a case of Brown syndrome? b) What is 'A' pattern? Discuss its causes and treatment. (5+5) D2019 (GUWAHATI)

AV PATTERN STRABISMUS

34. What is 'A' pattern? Discuss its causes and treatment. 5 D2019 (GUWAHATI)
35. Describe AV pattern deviations. Discuss etiology, Clinical features and management of these deviations. (2+2+3+3) J2013
36. How do you define A and V pattern in strabismus? How you will diagnose it and what is its clinical significance? D2010
37. Principles of management of A-V pattern strabismus. (2008)
38. A-V phenomenon in squint. (2003)
39. Discuss etiology, clinical features, investigations and management (including surgical) of V-exotropia. (2002) (1999)
40. A-exotropia, etiopathogenesis, clinical features and management. (2002) (2001)

DVD

41. What are dissociated vertical deviations (DVD)? How do you differentiate a DVD from an inferior oblique overaction? What is the management of DVDs? (2+4+4) D2015
42. Various types of eye movements. b) Various neuroanatomic pathways controlling eye movements. (5+5) D2014
43. Dissociated vertical deviation -its. etiology, differential diagnosis, clinical picture & management. (2002)

SURGERY

44. Role of Botulinum toxin in strabismus. What is Faden operation? (6+4) J2018
45. Describe Faden's operation as applied in management of strabismus. (10) D2013 2005
46. Describe muscle transplantation procedures in strabismus. (10) D2011

PARALYTIC STRABISMUS

47. Diagnosis of paralytic squint. (2000)
48. Surgical management of paralytic squint. (2000)

III NP

49. CF & management of 3rd nerve palsy (10) J2018
50. Causes, investigations and management of acute onset III nerve palsy. (4+3+3) D2017, 2008
51. Describe the applied anatomy of oculomotor nerve with the help of a diagram. Give causes of 3rd nerve palsy with treatment outline. D2012

IV NP

52. a) A 45-year-old patient presents with sudden onset vertical diplopia. What is the differential diagnosis?
b) Evaluation and management of acute onset vertical diplopia. (3+3+4) D2018
53. a. Anatomy of the superior oblique muscle. (2+2+6) D2014, 2003
b. Mechanism of its muscle actions in various directions of gaze.
c. Management of unilateral and bilateral superior oblique palsy.

VI NP

54. Management options in a case of lateral rectus palsy with visually disabling diplopia. (10) J2019
55. Describe pathological sequelae of right lateral rectus muscle paralysis J2009
56. Describe etiology, clinical features, investigations and management of 6th nerve palsy. J2012

GAZE PALSY

57. a) Supranuclear control of ocular movements.
b) Grades of binocular vision.
c) Tests for evaluation of binocular vision. (5+2+3) J2019



58. Define gaze palsy. Discuss various forms of gaze palsy with their localization value. D2012
59. Discuss supra-nuclear control of eye movements. (2008)
60. Classify ophthalmoplegia. Discuss internuclear ophthalmoplegia. (2006)
61. Internuclear Ophthalmoplegia. (2001)
62. Describe various etiological causes of horizontal gaze abnormalities. (1999)
63. Differential diagnosis of vertical gaze abnormality. (1999)

NYSTAGMUS

64. a) Nystagmus - Definition and types/classification. b) Approach & examination of a case of congenital nystagmus. c) Surgical options for management of nystagmus. (3+4+3) D2019
65. a) How do you assess a case of congenital nystagmus? b) What are the surgical options available to manage a case of nystagmus? (4+6) J2016
66. Management of Congenital Nystagmus with Squint. (2007)
67. Discuss nystagmus and its treatment. (2002)

MISCELLANEOUS

68. a) How do we test stereopsis? b) What is a Horopter? c) Anomalous retinal correspondence. 6+2+2 D2019 (GUWAHATI)
69. a) Sensory adaptation to strabismus.
b) What is fusional vergence?
c) Tests to measure visual acuity in preverbal children. (3+4+4) D2018
70. One and half syndrome cause and CF (4+6) J2018
71. Define abnormal retinal correspondence. Explain its development and methods of diagnosis. 2+(4+4) D2017
72. a) Difference between a Horopter and Panum's area.
b) Sensory and motor adaptations to strabismus. [4+(3+3)] J2015
73. What is binocular vision? What are the grades of binocular vision and mention a few important tests for stereopsis? (2+4+4) D2011
74. What is suppression in relation to strabismus? Discuss diagnosis and management of strategies of suppression. J2012
75. Orthophoria. (2005)
76. Management of Eccentric fixation. (2003)
77. Investigations of a case of Abnormal Head Posture. (2005)



IX. NEURO-OPHTHALMOLOGY

1. Anatomy
 - a) Visual pathway
 - b) Blood supply of optic nerve
 - c) Posterior ciliary circulation
 - d) Pupillary pathway and anisocoria
2. Scotoma
3. Optic nerve dysfunction
4. Optic neuropathy
 - a) Hereditary optic neuropathy
 - b) TON
 - c) AION
 - d) NAION
5. Optic neuritis
6. Papilledema
7. BIH
8. Optic nerve tumors
9. Headache

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NEURO-OPHTHALMOLOGY

ANATOMY

VISUAL PATHWAY

1. a) Describe Pie on the floor" in visual field with respect to visual pathway. b) What are the options of treatment for a case of amblyopia in a child of 10 years of age? Explain the physiology in brief. (4+6) D2019(GUWAHATI)
2. a) Visual pathway and its blood supply.
b) Anatomy of lateral geniculate body and visual cortex (5+5) J2019
3. Describe anatomy and lesions of optic tracts, chiasma and optic radiations. J2014
4. Causes and ocular manifestations of chiasmal lesions. (3+7) D2017
5. Draw a labeled diagram of visual pathways and briefly write about the correlation between level of lesion and clinical presentation. (10) D2011
6. Draw a labeled diagram of the visual pathways indicating the lesions and their causes at different levels. (5+5) J2011
7. Draw a diagram of visual pathway and show visual defects in craniopharyngioma and occipital lobe lesion. J2010
8. Visual field defects in pituitary tumors. (2008)

BLOOD SUPPLY OF OPTIC NERVE

9. Blood supply of optic nerve head and intraorbital optic nerve with well-labelled diagrams, and highlight its clinical importance. (7+3) J2016
10. Discuss the vascular supply of optic nerve. Describe fluorescein angiographic details of optic nerve head. Give the relevance of optic nerve head blood supply in AION. (4+3+3) D 2011, 2008,2007
11. Draw a labeled diagram of the vascular supply of the optic nerve and its implications for papilledema and ischemic optic neuropathy. (6+2+2) J2011

POSTERIOR CILIARY CIRCULATION

12. Write down anterior and posterior ciliary circulation and depict it by diagram. D2010
13. Describe posterior ciliary circulation. J2009

PUPILLARY PATHWAY & ANISOCORIA

14. a) Pupillary pathway. b) Pathway for accommodation. (5+5) D2019
15. a) Types of afferent pupillary defect.
b) Causes of light-near dissociation.
c) Pharmacological tests for Horner syndrome (4+3+3) D2018
16. a) Pupillary pathways with diagram. b) Causes, grading and clinical importance of relative afferent pupillary defect. (5+5) J2017
17. Describe sympathetic nerve supply to the eye with the help of a diagram. Describe various pharmacological tests to diagnose the abnormalities of sympathetic system. J2014
18. Describe the pupillary pathway of the eye. Write in brief about the lesions light near dissociations and its implications. (5+5) J2013
19. Draw a labelled diagram of pupillary reflex pathway. Discuss approach to diagnosis of anisocoria. J2012
20. Causes, differential diagnosis and clinical implications of anisocoria. 3+3+4 J2011

SCOTOMA

21. A 45-year-old patient presents with central scotoma. Discuss differential diagnosis, evaluation and management of such a case. (2+4+4) D2018
22. Define scotoma. How do you differentiate between positive and negative scotoma? Discuss the approach to diagnosis in a patient presenting with left hemianopia. J2012

OPTIC NERVE DYSFUNCTION

23. a) Signs of optic nerve dysfunction. b) Various investigations available to assess the optic nerve function. (4+6) J2015

OPTIC NEUROPATHY

HEREDITARY OPTIC NEUROPATHY

24. What is Leber's Hereditary Optic Neuropathy? Describe briefly its evaluation and management 3+(4+3) D2019 (GUWAHATI)



TON

25. Describe clinical features and management of Traumatic Optic-neuropathy. (5+5) D2011

NAION

26. Etiology, clinical picture and management of NAION. J 2009
27. Diagnosis and treatment of temporal arteritis. (1999)

AION

28. Describe typical and atypical clinical features, evaluation and management of arteritic AION (anterior ischemic optic neuropathy). (3+3+4) D2019
29. Ischemic optic neuropathy- diagnosis & management (5+5) D2017
30. How will you diagnose, investigate and treat a case of acute anterior ischemic optic neuropathy? (2+4+4) June 2016
31. Anterior ischemic optic neuropathy: types, clinical manifestations, investigations and management. (2+2+2+4) D2014

OPTIC NEURITIS

32. Discuss the etiology, clinical feature, diagnosis and management of optic neuritis in a 40 years old female. J2012
33. Multiple Sclerosis - Clinical features in ophthalmology. Also enumerate associated systemic features. Discuss management and prognosis of the disease. (2008)
34. Ocular manifestations of demyelinating diseases. (2004)
35. Clinical features, investigations & treatment in a case of neuromyelitis optical (Devic's disease). (2003)
36. Investigative profile in papillitis. (2002)
37. Signs, symptoms and diagnosis of papillitis. (2000)
38. Optic neuritis. (1999)

PAPILLEDEMA

39. Describe pathogenesis and pathological features of papilledema. J2014
40. Causes & recent advances in management of papilledema. (2008)
41. Pathology of papilledema. (2003,2001)
42. Unilateral papilledema. (2000)
43. Optic nerve sheath decompression. (2000)

BIH

44. Describe the clinical features, evaluation and management of idiopathic intracranial hypertension (3+3+4) D2019
45. Give clinical presentation, causes, and diagnostic modality and treatment options in benign intracranial hypertension. (2+3+2+3) D2013
46. Pseudotumor Cerebri. (2005)
47. Benign intracranial tension. (2001)

OPTIC NERVE TUMORS

48. a) Neurofibromatosis-ocular manifestations.
b) Differential diagnosis of optic nerve glioma. (5+5) J2019
49. What are the common tumors of optic nerve in adults? Give clinical features to differentiate them clinically and give salient pathologic features of these tumors. (3+2+5) J2013

MIGRAINE/ HEADACHE

50. a) Approach to headaches related to Ophthalmology. b) Approach to a case of Amaurosis Fugax. (5+5) D2019
51. a) What are the main types of migraine? b) Differential diagnosis of the visual phenomena that accompany an attack of migraine. (3+7) J2015
52. Transient loss of Vision. (2002)
53. Investigations of Amaurosis Fugax and management. (2005)
54. Ocular Headache. (2001)
55. Localizing signs of Intra-Cranial tumors. (2003)



X. DRUGS, COMMUNITY OPHTHALMOLOGY AND MISCELLANEOUS

A. Drugs

1. Drugs in ophthalmology
 - a) Antiviral drugs
 - b) Antibiotic drugs
 - c) Antifungal drugs
 - d) Cycloplegics
 - e) Antimetabolites
 - f) Other drugs
 - g) Preservatives
2. Drug delivery systems
3. Ocular bioavailability
4. Ocular toxicity
5. Dyes in ophthalmology
6. Ocular pathology
7. Lasers in ophthalmology
8. Sutures in ophthalmology
9. Systemic diseases and eye
10. Immunology
11. Genetics

B. Community ophthalmology

1. Biostatistics
2. National programs
 - a) Vision 2020
 - b) NPCB
3. Childhood blindness
4. Tele-ophthalmology
5. Visual disability

C. Miscellaneous

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DRUGS, COMMUNITY OPHTHALMOLOGY AND MISCELLANEOUS

DRUGS

ANTIVIRAL DRUGS

1. Describe pharmacological properties, mechanism of action and side effects of antiviral drugs used in ophthalmology. J2009
2. a) Role of newer anti-viral agents used in Ophthalmology. b) What are the specific advantages of these over available anti-viral? 5+5 D2016

ANTIBIOTIC DRUGS

3. Antibiotics used in Ophthalmology. (2003)
4. Fluoroquinolone in Ophthalmology. (2002)

ANTIFUNGAL DRUGS

5. Classify antifungal drugs, their clinical uses and side effects of each drug. (3+4+3) D2014

CYCLOPLEGICS

6. Write down indications, contraindications, pharmacology, side effects of cycloplegics commonly used in ophthalmology. D2010

ANTI-METABOLITES

7. Discuss role of anti-metabolites and immunosuppressive drugs in Ophthalmology. 10 D2011
8. What are the anti-metabolites used In Ophthalmology? Discuss their clinical uses and side effects. 3+3+4 D2013
9. a) Uses of MMC in ophthalmology
b) Mention side effects 8+2 J2018

OTHER DRUGS

10. Role of anti-oxidants in ophthalmology. (2007)

PRESERVATIVES

11. a) What are various preservatives in eye drops? b) What are their side effects and how does one treat them? 4+(3+3) J2016
12. Commonly used preservatives for ophthalmic preparations, their advantages and disadvantages. 4+3+3 D2017
13. a) Name 3 commonly used ophthalmic preservatives in topical medications
b) What are the adverse effects of preservatives in ophthalmic medications?
c) What are the various means of preventing these adverse effects? 1+4+5 J2018

DRUG DELIVERY SYSTEMS

14. a) Drug delivery systems utilized in Ophthalmology. b) Antimetabolites used in Ophthalmology. (5+5) D2019

OCULAR BIOAVAILABILITY

15. Methods to increase the ocular bioavailability and efficacy of drugs used in treatment of ocular disorders, along with example. (10) J2017

OCULAR TOXICITY

16. Common systemic medications and ocular toxicity. (10) J2017
17. Side Effects of a) Vitamin A b) MAO inhibitors. (2004)
18. Ocular effects of sildenafil (Viagra). (2001)

DYES IN OPHTHALMOLOGY

19. a) Uses of various dyes in Ophthalmic Surgery. b) What are types of multifocal IOL? What are their disadvantages? (5+5) D2019(GUWAHATI)
20. a) Define and enumerate vital dyes used in Ophthalmology.
b) Clinical applications of vital dyes in diagnosis and treatment of ophthalmic diseases 1+2+7 D2018
21. Describe salient features of the various dyes used in ophthalmology. Give their indications and complications. (2008)
22. Staining of Lens capsule. (2003)

OCULAR PATHOLOGY

23. a) Chemical fixatives for histopathological examination of ophthalmic specimens.
- b) Application of routine and special stains in histopathology. 4+6 D2018

LASERS IN OPHTHALMOLOGY

24. a) Enumerate various types of LASERs used in ophthalmic practice.
- b) Uses of LASERs in ocular disorders.
- c) Safety precautions in LASER delivery (2+6+2) J2019
25. Various laser used in ophthalmology. J2010
26. Basic principles of LASER. (2003)
27. Discuss ophthalmic Lasers and their indications. (2003) (2003)
28. Coagulative lasers in ophthalmology. (2000)
29. Photoablation. (2000)

SUTURES IN OPHTHALMOLOGY

30. Sutures used in ophthalmology. (2001)

STERILIZATION, PREOPERATIVE PROPHYLAXIS AND OPERATING THEATRE

31. Sterilization techniques - Ophthalmic operation theatre, surgical instruments and logistics. 4+3+3 D2019
32. a) Essential components of modular ophthalmic operating room. b) Disinfection and sterilization of operating room. 5+5 D2018
33. Discuss various preoperative and perioperative aseptic approaches for prevention of intraocular infection. 10 D2018
34. Method of sterilization of (A) Linen, sharp instruments, blunt instruments, Diamond knife. (B) Disinfection of operation theatre. (2003)

SYSTEMIC DISEASE AND EYE

35. a) Phacomatoses — Definition, types & ocular manifestations. b) Management of ocular manifestations of neurofibromatosis. 6+4 D2019
36. (a) Diagnostic criteria for Neurofibromatosis. (b) Ocular features of Neurofibromatosis Type 1 & 2. [3+(4+3)] D2015
37. a) Ocular manifestations of dengue fever.
- b) How will you monitor and manage a case of dengue fever from ophthalmic standpoint? (5+5) D2015
38. Various systemic diseases affecting eye. J2010
39. Ocular manifestations of leukemia. Highlight the differential diagnosis of each sign. (2008)
40. Von-Hippel-Lindau Syndrome. (2007) (2005)
41. Name different oculo-muco-cutaneous disorder. (2006)
42. Ocular Features of neurofibromatosis. (2005)
43. Ocular involvement in Mucopolysaccharidosis. (2005)
44. Crouzon's Disease. (2005)
45. Ocular manifestations of High altitude. (2005)
46. Alcoholism and Eye. (2007)

IMMUNOLOGY

47. Enumerate and describe role of biomarkers which may be beneficial in diagnosis, pathogenesis, treatment strategies and prevention of various ocular morbidities. 10 D2019
48. Enumerate important pro-inflammatory cytokines. What roles do they play in ocular inflammation? (4+6) J2011
49. What are cytokines? Enumerate important pro-inflammatory cytokines. What role do they play in ocular inflammation? (5+5) D2014

GENETICS

50. Enumerate few gene mutations for ophthalmic disorders. 4 D2019 (GUWAHATI)
51. a) Role of immunosuppressive drugs in ocular disorders.
- b) Gene therapy. (5+5) J2019
52. Discuss the role of genetics In Ophthalmology. 10 J2013

COMMUNITY OPHTHALMOLOGY

BIOSTATISTICS

53. a) What is RCT?



- b) What is randomization why is it required
c) What are confounding factors in a study & how to avoid them? (3+3+4) J2018
54. a) What are the types of prospective studies and their advantages? b) What are the methods to avoid bias in a study? (6+4) J2017
55. a) Enumerate two broad headings for study designs and give one example under each category. b) Define specificity and sensitivity in evaluating screening tests. What is their relevance to positive and negative predictive value of the test? [2+(2+2+2+2)] D2016
56. a) Tests of significance b) Standard deviation c) Confidence interval (4+3+3) J2016
57. a) What are bias and confounding in statistical analysis?
b) A sample of 100 patients was segregated into 2 groups to check the IOP lowering effect of 2 different anti-glaucoma medications. Give 5 possible causes of bias and 5 possible confounders. [2X (2.5+2.5)] D2015

NATIONAL PROGRAMS

VISION 2020

58. What is vision 2020? What are the diseases covered under this scheme? Briefly describe its functioning strategy. 2014 D2013 (2009) (2006) (2003) (2001)
59. Aims and Objective of vision 2020. (2009) (2005)

NPCB

60. What are the objectives and action plan of “National Programme for Control of Blindness” (NPCB)? Give the definition of blindness as per NPCB and WHO. (4+4) +(1+1) D2015
61. National Programme of control of blindness. D2011 (2003) (2002)
62. Write down constitution and functions of district eye relief society as mentioned in National Program for Control of Blindness. J2010
63. District blindness control society-composition and role. (1999)

CHILDHOOD BLINDNESS

64. Enumerate causes of childhood blindness. How will you calculate sample size and plan survey of childhood blindness in India? J2014
65. Discuss causes and problems in management of childhood blindness. J2012 (2002)
- ### **TELE-OPHTHALMOLOGY**
66. Tele-ophthalmology — role and application/set up. (2+8) D2019

VISUAL DISABILITY

67. a) How do you certify a case of visual disability? 5 D2019 (GUWAHATI)
68. Answer the following: (2+2+2+4) D2013
- A. Define low vision as per WHO Criteria.
B. How do you evaluate a person with low vision?
C. What are the goals of visual rehabilitation?
D. Enumerate and discuss various management options of low vision
69. Write the definition of blindness as per WHO standards. Enumerate important causes of blindness as per 4 important surveys in India. D2012
70. Visual impairment classification by WHO. Briefly discuss common causes of visual impairment in India and remedial steps. (2008)

MISCELLANEOUS

71. Describe three most ophthalmic emergencies requiring immediate management. (2009)
72. Discuss hysterical blindness and its management. (2008)
73. Causes of glare and how to manage it. (2006)
74. Atrophic Bulbi. (2006)
75. Aniseikonia. (2004)
76. Eye strain. (2002)
77. Causes and management of ocular hypotony. (2001)
78. Malingering in relation to eye. (2001)
79. CAM VISION Stimulator. (2000)



XI. OPTICS, REFRACTION AND INSTRUMENTS

A. Optics

1. Visual acuity
2. Color vision
3. Contrast sensitivity
4. Reduced eye
5. Pseudophakic eye
6. Strum's conoid
7. Aberrations

B. Refractive error

1. Hypermetropia
2. Myopia
3. Astigmatism
4. Aphakia
5. Anomalies of accommodation and convergence

C. Instruments

1. Operating microscope
2. Slit lamp
3. DO
4. IDO
5. +90D, +20D
6. Retinoscopy
7. AR
8. Pinhole/stenopic slit
9. Prisms
10. Jackson's cross cylinder
11. Bagolini's striated glasses
12. Spectacles
13. Focimeter
14. LVA

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OPTICS

VISUAL ACUITY

1. Visual acuity in pre verbal children - its relevance and methods of evaluation. Clarify concept of critical period of visual development. (2008)
2. How will you assess visual acuity in infants and preschool children? (2006) (2001)

COLOR VISION

3. a) Theories of color vision b) Methods of color vision evaluation (4+6) D2017
4. Write a short note on color vision indicating the cone pigments, the primary colors, the attributes of color and anomalies of color vision. (2+2+3+3) J2011
5. Various type of color vision deficiency. J2010
6. Color vision. (2000)
7. Describe theories of color vision and genetics of color blindness. (2008) (2003)
8. Acquired color deficiency. (2001)

CONTRAST SENSITIVITY

9. a) What is contrast sensitivity? b) What are various methods to measure it? c) How do different types of intraocular lenses influence contrast sensitivity? (2+4+4) J2016
10. Describe the principles of contrast sensitivity (CS). Describe various method of measuring CS testing and its role in various ocular condition. D2012, J2012
11. Contrast Sensitivity. (2009) (2008) (2004) (2003) (2002) (1999)

REDUCED EYE

12. Describe schematic and reduced eye with help of diagrams. J2010
13. What is Donder's reduced eye? What are the cardinal points? (2+8) D2014

PSEUDOPHAKIC EYE

14. Describe optics of a pseudophakic eye. (2008)

STRUM'S CONOID

15. Draw the strum's conoid indicating the cross sections at different intervals, and the interval of Strum giving its clinical applications. 4+4+2 J2011
16. What is sturm conoid? Explain its clinical importance with the help of diagram(s). 3+3+4 D2013
17. a) Labelled diagram of Sturm's conoid. 3 2017
18. Draw the strum's conoid indicating the cross sections at different intervals, and the interval of Strum giving its clinical applications. (2011)
19. Sturm's conoid- illustrate with diagram. (2005)

ABERRATIONS

20. a) Describe in brief various aberrations of the optical system of the eye.
21. What are the various corrective mechanisms built in the eye to overcome these? J2014
22. a) What are spherical aberrations? b) What is negative and positive asphericity of cornea? Give one example of each. 4+(4+2) D2016
23. What is computer vision syndrome? Describe its causes and management. D2010
24. Optical Aberrations in human eye. (2004)

REFRACTIVE ERROR

HYPERMETROPIA

25. a) Classification and components of hypermetropia. b) Approach for subjective verification of refraction. (4+6) J2017
26. a) Define hypermetropia and its components) How it effects accommodation and ocular alignment? [(1+3) +(3+3)] D2015
27. Define range and amplitude of accommodation. Define manifest and latent hypermetropia. What are the different ways to uncover the latent hypermetropia? J2012

28. Classify hypermetropia. How will you prescribe glasses in a 20-year-old male with hypermetropia? D2010
29. Correction of hypermetropia and presbyopia. (2008)
30. Symptoms, effects, diagnosis and management of Hypermetropia. (2003)

MYOPIA

31. a) Etiology and classification of myopia b) Clinical features of pathological myopia [(3+3) +4] D2017 ,2002
32. Write various methods of correction of myopia and their advantages and disadvantages. D2010

ASTIGMATISM

33. Describe the types of astigmatism and their management. (5+5) D2011,2002
34. a) Labelled diagram of Sturm's conoid. b) Classify astigmatisms with example. c) Methods to treat astigmatism. 3+3+4 J2017

APHAKIA

35. Problems of aphakic patient. (2002)
36. Disadvantages of Aphakic glasses. (2000)

ANOMALIES OF ACCOMMODATION

37. a) Discuss the disorders/anomalies of accommodation and their management. b) What is the clinical application of accommodation & convergence amplitude in subjective prescription of glasses? (6+4) D2019(GUWAHATI)
38. Describe the principles of management of accommodation anomalies by surgery. 10 J2011
39. Define accommodation and convergences (2009)
40. Define Accommodative Convergence: Accommodation (AC: A) Ratio. What is the normal? Value and name the methods to measure it? (2007)
41. Accommodation-convergence. (2000)

INSTRUMENTS

OPERATING MICROSCOPE

42. Optics of operating microscope with neat labeled diagram (10) D2017
43. Describe with diagrams the optics of operating microscope. (2003)

SLIT LAMP

44. Enumerate various methods of slit lamp examination and describe indications and procedures for specular reflection. D2010
45. Transillumination - types and clinical application in ophthalmology. (2008)
46. Transillumination of iris in eye diseases. (2005)

DO

47. Principles of direct Ophthalmoscope. D2009,2001

IDO

48. Describe the Lenses used for viewing the central retina on a slit lamp biomicroscope. J2014
49. What is magnification achieved by indirect ophthalmoscopy and 90 D biomicroscopic examination and discuss advantages and indications of both the procedures. D2010
50. a) What is the Principle of Indirect Ophthalmology (IDO)?
b) What are the Various Lenses used for doing IDO and what are their advantages and disadvantages? J2010
51. Describe with Diagrams the optics of Indirect Ophthalmoscope. (2005) (2004)

+90D, + 20D

52. Give labelled diagram of optics of 90D for retinal examination. Give the advantages and disadvantages of retinal examination with respect to use of 20D lens. J2012
53. Draw optics of +90D biomicroscopy. How will you calculate the magnifications? D2009

RETINOSCOPY

54. a) Retinoscopy - types & technique. b) Subjective correction (prescription of glasses) in patients aged 15 years and 50 years. (1+3+3+3) D2019, 2000
55. Define Retinoscopy. What are its principles and its types? What inferences are drawn while doing retinoscopy with plain and concave mirrors? (1+3+6) D2014
56. a) Principle and optics of retinoscopy. b) What are the problems of retinoscopy? (6+4) J2016

AR

57. What are the pitfalls in autorefractometry and how to correct them? D2010, D2009
58. Retinoscopic refraction versus Auto-refractometer. (2002)

STENOPIC SLIT/ PINHOLE

59. Optics and uses of pinhole and stenopic slit. (2002)

PRISMS

60. Describe clinical and therapeutic uses of prisms in ophthalmology. (10) D2014
61. What is Prism? Explain the refraction of light through a prism. What are the uses of prism in ophthalmological practice? (2+4+4) D2013
62. Describe in brief four clinical uses of prisms in ophthalmology. What are Fresnel prisms and mention one important application of these types of prisms? Give principle of induction of prismatic effect through spectacle lens, D2012
63. Use of prisms in ophthalmology. (2003) (1999)
64. Therapeutic uses of Prisms. (2001)
65. Fresnel's Prisms. (2007)

CROSS CYLINDER

66. What is a cross cylinder? Where all is it used during refractions? How can you create a cross cylinder by using lenses from the trial set, please explain giving an example? 2+4+4 J2013

BAGOLINI'S STRIATED GLASS

67. Principle, optics and clinical application of Bagolini's striated glass. J2010

SPECTACLES

68. a) Types of lenses used in spectacle & their advantages. b) Uses of prisms in Ophthalmology. 5+5 D2019 (GUWAHATI)
69. a) Progressive glasses design b) When to use it and advantages over conventional glasses? 6+4 J2018
70. a) What are the different designs of bifocal spectacle lens? b) Give 2 advantages and disadvantages of each type. c) What is the best design to minimize these pitfalls? 3+4+3 D2016
71. What are spherical aberrations? How do the spectacle lenses induce these aberrations? What modifications are done to minimize these spectacle induced aberrations? 3+3+4 J2013
72. Describe optics of 'Jack in the Box' phenomenon. How can you prevent it? 5+5 J2013

FOCIMETER

73. What is Badal's principle? Discuss its relevance to focimetry? (5+5) D2011

LVA

74. Describe the role of computer in ophthalmology. Enumerate the various methods to enhance visibility for patient with low vision. J2010
75. Describe management options for a 60-year old patient suffering from age related macular degeneration with visual acuity of 3/60 in both eyes. Discuss options for visual rehabilitation of patient. 5+5 J2019
76. a) Categories of low vision and classification low vision aids (LVA). b) Evaluation of a patient with low vision. 2+3+5 D2018
77. Optical and non - optical Aids in correction of low vision. (2008)
78. Visual Rehabilitation in Macular Pathology Patients. (2005)
79. Low vision aids. (2005) (2002) (2000)
80. Visual Rehabilitation of Blind. (2005)
81. How do you prescribe low vision aids? (2002)

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