Ancillary Material: ORT213 Summer 2016 Computer Answer Sheet

ACADEMIC UNIT OF OPHTHALMOLOGY & ORTHOPTICS

Summer Semester 2016 3 Hours

VISUAL OPTICS

Registration number from U-Card (9 digits) – to be completed by student

Please ensure that you fill in your registration number in the spaces above.

Answers to Section A should be indicated on the computer answer sheet in black or dark blue pen.

Answers to Section B and C should be written in the 8 leaf answer book provided.

At the end of the examination leave the question paper, computer answer sheet and the answer book for collection by the invigilator.

Section A: Forty multiple choice questions, carries 20% (1 correct from choice of 5) of the total for ORT 213.
   Correct answer: 1 mark
   Incorrect answer: 0 marks
   Unanswered or more than one answer: 0 marks
   You are advised to spend 1 hour on this section

Section B: Three calculations from a choice of four questions, carries 25% of the total for ORT 213. The mark for each part of each question is indicated in brackets.
   You are advised to spend 1 hour on this section.

Section C: Two compulsory long answer questions, carries 25% of the total of ORT 213. Attempt both questions.
   You are advised to spend 1 hour on this section.

ORT 213
Section A:
40 questions removed before publication.

Section B: Answer three calculations from a choice of four.
4 questions removed before publication

Section C: Answer both questions.

1. a) Draw a diagram of a Galilean telescope in its afocal setting for an object at optical infinity. Show that the separation of the lenses is equal to the sum of the second focal lengths of the objective and eyepiece lenses. (5)

   b) Outline the possible ways of providing X4 magnification for a near task, highlighting the advantages and disadvantages of each aid. (5)

   c) What “non-optical” aids may help with improving the near vision performance of a patient with low vision due to non-exudative ARMD. (5)

2. a) Define astigmatism. (2)

   b) Describe the detection of astigmatism using a subjective refracting technique of your choice. (8)

   c) State one cause of corneal, irregular astigmatism and discuss the theory of using a rigid contact lens to correct it. (5)

END OF QUESTION PAPER
Ancillary Material: Computer answer sheet

ACADEMIC UNIT OF OPHTHALMOLOGY & ORTHOPTICS

Spring Semester 2016 3 Hours

VISUAL OPTICS

Registration number from U-Card (9 digits) – to be completed by student

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This paper is 70% of the total for ORT 213.

Section A: Forty multiple choice questions, carries 20% (1 correct from choice of 5) of the total for ORT 213.

   Correct answer: 1 mark
   Incorrect answer: 0 marks
   Unanswered or more than one answer: 0 marks

   You are advised to spend 1 hour on this section

Section B: Three calculations from a choice of four questions, carries 25% of the total for ORT 213. The mark for each part of each question is indicated in brackets.

   You are advised to spend 1 hour on this section.

Section C: Two compulsory long answer questions, carries 25% of the total of ORT 213. Attempt both questions.

   You are advised to spend 1 hour on this section.
Section A:
40 questions removed before publication

Section B: Answer three calculations from a choice of four.
4 questions removed before publication

Section C: Answer both questions.

1. Using diagrams, explain the optical principles of retinoscopy showing the conditions necessary for:
   a) With motion (3)
   b) Against motion (3)
   c) Reversal (3)
   d) Speed (3)
   e) Brightness (3)

2. a) Outline the trichromatic theory of normal colour vision and describe the main congenital colour vision anomalies. (9)
   b) Describe the principles of two types of colour vision tests routinely used in colour vision assessment. (6)

END OF QUESTION PAPER
Ancillary Material: Computer answer sheet

ACADEMIC UNIT OF OPHTHALMOLOGY & ORTHOPTICS

Spring Semester 2015 3 Hours

VISUAL OPTICS

Registration number from U-Card (9 digits) – to be completed by student

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Answers to Section B and C should be written in the 8 leaf answer book provided.

At the end of the examination leave the question paper, computer answer sheet and the answer book for collection by the invigilator.

Section A: Forty multiple choice questions, carries 30% (1 correct from choice of 5) of the total for this paper. Correct answer: 1 mark Incorrect answer: 0 marks Unanswered or more than one answer: 0 marks You are advised to spend 1 hour on this section

Section B: Three calculations from a choice of four questions, carries 35% of the total for this paper. The mark for each part of each question is indicated in brackets. You are advised to spend 1 hour on this section.

Section C: Two compulsory long answer questions, carries 35% of the total of this paper. Attempt both questions. You are advised to spend 1 hour on this section.
Section A:
40 questions removed before publication

Section B: Answer three calculations from a choice of four.
4 questions removed before publication

Section C: Answer both questions.
1. a) Draw a diagram of a Galilean telescope in the afocal setting. (4)
   b) Outline the options for giving 4X magnification at near, giving the pros and cons of each method. (6)
   c) What other methods are available to the low vision practitioner to help patients see to read at near. (5)

2. a) Briefly describe Helmholtz’s theory of normal accommodation. (3)
   b) Describe the physiological changes that occur in the human crystalline lens that result in presbyopia? (5)
   c) Discuss the factors that affect the age when a presbyopic correction is needed for the first time. (7)

END OF QUESTION PAPER
Ancillary Material: Computer Answer Sheet

ACADEMIC UNIT OF OPHTHALMOLOGY & ORTHOPTICS

Spring Semester 2014 3 Hours

VISUAL OPTICS

Registration number from U-Card (9 digits) – to be completed by student

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Answers to Section B and C should be written in the 8 leaf answer book provided.

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Section A: Forty multiple choice questions, carries 30% (1 correct from choice of 5) of the total for this paper.

Correct answer: 1 mark
Incorrect answer: 0 marks
Unanswered or more than one answer: 0 marks

You are advised to spend 1 hour on this section.

Section B: Three calculations from a choice of four questions, carries 35% of the total for this paper. The mark for each part of each question is indicated in brackets.

You are advised to spend 1 hour on this section.

Section C: Two compulsory long answer questions, carries 35% of the total of this paper. Attempt both questions.

You are advised to spend 1 hour on this section.
Section A:

40 questions removed before publication

Section B: Answer three calculations from a choice of four.

4 questions removed before publication

Section C: Answer both questions.

1. a) Using longitudinal chromatic aberration, explain the principles of a subjective refraction test. (8)
   
   b) Outline the mechanism of chromostereopsis using transverse chromatic aberration. (7)

2. a) Describe the effect on vision of a congenital nuclear cataract. (6)
   
   b) Discuss the problems faced by the practitioner when considering the correction of monocular aphakia in the paediatric patient. (9)

END OF QUESTION PAPER
ACADEMIC UNIT OF OPHTHALMOLOGY & ORTHOPTICS

AUGUST 2013 3 Hours

VISUAL OPTICS

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Section A: Forty multiple choice questions, carries 30% (1 correct from choice of 5) of the total for this paper.
   Correct answer: 1 mark
   Incorrect answer: 0 marks
   Unanswered or more than one answer: 0 marks
You are advised to spend 1 hour on this section

Section B: Three calculations from a choice of four questions, carries 35% of the total of this paper. The mark for each part of each question is indicated in brackets.
You are advised to spend 1 hour on this section.

Section C: Two compulsory long answer questions, carries 35% of the total of this paper. Attempt both questions.
You are advised to spend 1 hour on this section.
Section A & B

Questions removed prior to publication of paper

Section C: Answer both questions.

1. a) Explain, using diagrams, the optical principles of retinoscopy. (10)

   b) Give details of those aspects of your retinoscopy technique that increase the accuracy of your measurement. Give reasons for your choices. (6)

2. a) Outline the tri-chromatic theory of normal colour vision. (6)

   b) What are the main types of colour vision defect and discuss their identification in a clinical setting. (10)

END OF QUESTION PAPER
Ancillary Material: Computer answer sheet.

ACADEMIC UNIT OF OPHTHALMOLOGY & ORTHOPTICS

Spring Semester 2013

3 Hours

VISUAL OPTICS

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Section A: Forty multiple choice questions, carries 30% (1 correct from choice of 5) of the total for this paper.
  Correct answer: 1 mark
  Incorrect answer: 0 marks
  Unanswered or more than one answer: 0 marks

You are advised to spend 1 hour on this section.

Section B: Three calculations from a choice of four questions, carries 35% of the total of this paper. The mark for each part of each question is indicated in brackets.

You are advised to spend 1 hour on this section.

Section C: Compulsory long answer questions, carries 35% of the total for this paper. Attempt both questions.

You are advised to spend 1 hour on this section.
Section A:

40 Questions removed prior to publication

Section B:

Answer three calculations from a choice of four.

4 Questions removed prior to publication

Section C:

Answer both questions.

1. a) Draw a diagram of a Galilean telescope in its afocal setting for an object at optical infinity. Show that the separation of the lenses is equal to the sum of the second focal lengths of the objective and eyepiece lenses. (5)

   b) Outline the possible ways of providing X4 magnification for a near task, highlighting the advantages and disadvantages of each aid. (5)

   c) What “non-optical” aids may help with improving the near vision performance of a patient with low vision due to non-exudative ARMD. (5)

2. a) Define astigmatism. (2)

   b) Describe the detection of astigmatism using a subjective refracting technique of your choice. (8)

   c) State one cause of corneal, irregular astigmatism and discuss the theory of using a rigid contact lens to correct it. (5)

END OF QUESTION PAPER
Ancillary Material: Computer Answer Sheet

ACADEMIC UNIT OF OPHTHALMOLOGY & ORTHOPTICS

AUGUST 2012 3 Hours

VISUAL OPTICS

Registration number from U-Card (9 digits) – to be completed by student

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Section A: Forty multiple choice questions, carries 30% (1 correct from choice of 5) of the total for this paper.
  Correct answer: 1 mark
  Incorrect answer: 0 marks
  Unanswered or more than one answer: 0 marks
You are advised to spend 1 hour on this section

Section B: Three calculations from a choice of four questions, carries 35% of the total of this paper. The mark for each part of each question is indicated in brackets.
You are advised to spend 1 hour on this section.

Section C: Two compulsory long answer questions, carries 35% of the total of this paper. Attempt both questions.
You are advised to spend 1 hour on this section.
Section A:
40 questions removed prior to publication

Section B: Answer three calculations from a choice of four.
4 questions removed prior to publication

Section C: Answer both questions.

1. a) Explain, using diagrams, the optical principles of retinoscopy. (9)

   b) Give details of those aspects of your retinoscopy technique that increase the accuracy of your measurement. Give reasons for your choices. (6)

2. a) Outline the tri-chromatic theory of normal colour vision. (6)

   b) What are the main types of colour vision defect and discuss their identification in a clinical setting? (9)

END OF QUESTION PAPER
AcaDemic Unit of OphtHALMOLOGY & ORThOPTICS

SPRING SEMESTER 2012 3 Hours

VISUAL OPTICS

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Section A: Forty multiple choice questions, carries 30% (1 correct from choice of 5) of the total for this paper.

- Correct answer: 1 mark
- Incorrect answer: 0 marks
- Unanswered or more than one answer: 0 marks

You are advised to spend 1 hour on this section.

Section B: Three calculations from a choice of four questions, carries 35% of the total for this paper. The mark for each part of each question is indicated in brackets.

You are advised to spend 1 hour on this section.

Section C: Two compulsory long answer questions, carries 35% of the total of this paper. Attempt both questions.

You are advised to spend 1 hour on this section.
Section A:
40 questions removed prior to publication

Section B: Answer three calculations from a choice of four.
4 questions removed prior to publication

Section C: Answer both questions.
1. a) With the help of ray diagrams, demonstrate the illumination and image formation found with direct and indirect ophthalmoscopy. (9)

   b) Give reasons why binocular indirect ophthalmoscopy is preferred clinically, although direct ophthalmoscopy gives the greatest magnification. (6)

2. a) Give a brief account of the anatomical changes associated with presbyopia. (6)

   b) Give reasons for the observed large age range over which the first presbyopic correction is required. (9)

END OF QUESTION PAPER