Reg. No.: ……

First Year B.Sc Optometry Degree Supplementary Examinations May 2022
Physics & Chemistry
(2014 Scheme)

Time: 3 hrs **Max marks: 80**

- ***Answer all questions to the point neatly and legibly • Do not leave any blank pages between answers***
- ***Indicate the question number correctly for the answer in the margin space***
- ***Answer all parts of a single question together • Leave sufficient space between answers***
- ***Draw table/diagrams/flow charts wherever necessary • Write section A and section B in separate answer books (32 Pages). Do not mix up questions from section A and section B.***

Q P Code: 115013 Section A – Physics Marks: 40

Essay: **(10)**

1. Explain the construction and working of a Laurent's half shade polarimeter to measure specific rotation

Short notes: **(3x5=15)**

2. Derive the tangent condition for the elimination of distortion
3. Explain how thickness of a thin film can be measured by Lloyd's single mirror experiment
4. Briefly illustrate the propagation of electromagnetic wave in an isotropic media

Answer briefly: **(5x2=10)**

5. Draw the intensity distribution curve due to a Fraunhofer single slit diffraction
6. Define optical rotation and optical activity
7. Raman scattering
8. What are lens matrices
9. Astigmatism and how it is eliminated

Fill in the blanks: **(5x1=5)**

10. LASER is an acronym for.....
11. A path difference of λ corresponds to a phase difference of.....
12. Our eye has maximum response to .....colour of light
13. A positive zone plate forms a.....image
14. The intensity of the principal maxima for a grating of N slits is proportional to.....

Q P Code: 116013 Section B – Chemistry Marks: 40

Essay: **(10)**

1. What are carbohydrates. How are they classified. Give the sources and uses of starch and cellulose.

Short notes: **(3x5=15)**

2. Give the important functions of hormones
3. Explain the term racemization with suitable example
4. Bring out the distinguishing features of inductive effect and electrometric effect

Answer briefly: **(5x2=10)**

5. What are nucleophiles. Give two example
6. Give two example for molecule exhibiting optical isomerism
7. How can benzene be converted to toluene
8. How are free radicals formed
9. Give the principle used for the determination of pH using electrometric method

Fill in the blanks: **(5x1=5)**

10. ---------- vitamin responsible for coagulation of blood
11. Maleic acid and fumaric acid are ---------- isomers
12. The attacking electrophile in an aromatic nitration reaction is ---------- ion
13. --------- is a plant polysaccharide consisting of glucose unit
14. The hybridization state of both carbon in acetylene is ----------

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