ALLAMA IQBAL OPEN UNIVERSITY, ISLAMABAD

(Department of Science Education)

WARNING

1. **PLAGIARISM OR HIRING OF GHOST WRITER(S) FOR SOLVING THE ASSIGNMENT(S) WILL DEBAR THE STUDENT FROM THE AWARD OF A DEGREE/CERTIFICATE, IF FOUND AT ANY STAGE.**
2. **SUBMITTING ASSIGNMENTS BORROWED OR STOLEN FROM OTHER(S) AS ONE'S OWN WILL BE PENALIZED AS DEFINED IN "AIOU PLAGIARISM POLICY".**

Note: Before attempting assignments, please read the following instructions:

1. All questions are compulsory.
2. Read each question carefully before writing an answer.
3. Read the relevant units of the study guide for writing the answer to a question and properly arrange the points for the answer.
4. You may take help from other resources such as books, websites, and other online resources for writing the answer to a question.
5. You must mention the resources used for writing an answer at the end of the answer.
6. If any part of your assignment is not marked or there is an error in the calculation of the total score of the assignment, then you may contact your tutor/regional center for further guidance.

Course: **Physics II (6442)** **Semester: Spring, 2026**
Level: **BEd (2.5 & 4 years)** **Total Marks 100**
Pass Marks: 40

Assignment No. 1
(Units: 1 - 4)

Q.1 Give mathematical equations that represent different Lissajous patterns along with diagrams. How to find the time period of a torsional pendulum? (20)

Q.2 Write the principle of superposition. Write down its applications. Also describe types of interference and their applications in the field of science.(20)

Q.3 Write down its equation along with its interpretation. Also discuss the relationship between relativistic momentum and relativistic energy. (20)

Q.4 What is the minimum distance between two points on a wave that differ in phase by 60 degrees, when it is travelling through air? (20)

Q.5 Derive the wave equation. Explain how the wave equation can be used to translate any kind of wave? (20)

Assignment No. 2
Unit (5-9)

Q.1 Write down the Young double slit experiment. Explain its findings with the help of diagrams and mathematical relations. (20)

Q.2 What is a diffraction Grating? Write down its uses. Also describe dispersion and resolving power. (20)

Q.3 Explain the polarization production process. What are the different states of polarization? State its applications. (20)

Q.4 Explain the origin and building blocks of Quantum theory. (20)

Q.5 State and explain the significance of localization of waves in space and time. (20)