



ALLAMA IQBAL OPEN UNIVERSITY  
Semester Terminal Exam Autumn 2020

Program /level:	B Ed	Maximum Marks	100
Title /Course Code	<b>Physics V (Practical) (8671)</b>	Pass marks	50

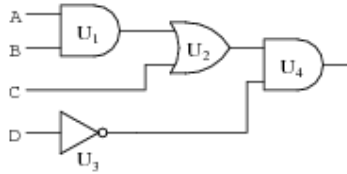
**Instructions for Exams:**

1. Attempt All Questions.
2. Write answers in your own words and avoid copying from an internet source or any book.
3. Be precise, avoid unnecessary details, answer to each question must be between 600-800 words.
4. Students are advised to upload their answer sheets/solutions on LMS portal as soon as they complete their answers and not to wait for 8:30 PM.
5. Submissions after due date & time will not be entertained. Attach undertaking with each course code which were allowed to attempt in Urdu.
6. If plagiarism found, Student may be declared fail.

Q. No.	Questions	Marks
1	<p>a) Write the procedure of Experiment to “determines the value of <math>g</math> by compound pendulum” explores another way to study the compound pendulum by varying the position of center of mass by shifting mass <math>m_1</math> rather than the point of suspension, justify this statement.</p> <p>b) What happens if another planet of the same size as Saturn were put into orbit around the Sun along with Saturn. Would the moment of inertia of the system increase, decrease, or stay the same? Explain with justification.</p>	<b>16+17</b>
2	<p>a) Submarine is 40m below the surface of the sea. The pressure due to the water at the depth is <math>P</math>. On another day, the submarine is 48m below the surface of the fresh water. The density of sea is 1.3 times the density of fresh water. What is the pressure due to the fresh water at a depth of 48m?</p> <p>b) Explain why a person’s legs appear very short when wading in a pool. Justify your explanation with a ray diagram showing the path of rays from the feet to the eye of an observer who is out of the water.</p>	<b>16+17</b>

3

a) Predict how the operation of this logic gate circuit will be affected as a result of the following faults. Consider each fault independently (i.e. one at a time, no multiple faults):



Output of OR gate U<sub>2</sub> fails low:

Output of inverter gate U<sub>3</sub> fails low:

Output of AND gate U<sub>1</sub> fails high:

For each of these conditions, explain *why* the resulting effects will occur

b) A useful test instrument for digital gate circuit troubleshooting is a *logic pulsar*. Explain its functions and give an example of how it is used?

17+17