

Program: B. Sc. In ME/IPE (6th Semester)

Date: 12 March 2024

Time: 10.00 a.m. to 11.30 a.m.

ISLAMIC UNIVERSITY OF TECHNOLOGY (IUT)
ORGANISATION OF ISLAMIC COOPERATION (OIC)
DEPARTMENT OF MECHANICAL AND PRODUCTION ENGINEERING

Mid Term Examination

Summer Semester: 2022-2023

Course Number: IPE 4655

Full Marks: 75

Course Title: Micro and Nano Manufacturing

Time: 1 Hour 30 Minutes

There are 3 (Three) Questions. Answer 3 (Three) Questions. Marks of each Question and corresponding CO and PO are written in the brackets.

-
1. (a) Interpret the MEMS and NEMS with their advantages and disadvantages in the precision engineering. (08)
(CO1)
(PO1)
 - (b) State the LASER micro manufacturing with the characteristics and practical applications. (05)
(CO1)
(PO1)
 2. (a) Illustrate the processes used in the electro-photography with graphical interpretation. (08)
(CO2)
(PO1)
 - (b) Demonstrate the processes used in the MEMS and NEMS with physical significance. (09)
(CO2)
(PO1)
 - (c) Illustrate carbon nano tubes with the properties, working procedure and practical applications. (09)
(CO2)
(PO1)
 3. (a) Illustrate the basic steps required for the design and fabrication of MEMS/NEMS. (08)
(CO3)
(PO2)
 - (b) Classify the silicon micromachining with their characteristics and procedural steps required for the fabrication of micro machined devices. (12)
(CO3)
(PO2)
 - (c) Classify the advanced nano finishing processes with their characteristics, advantages, disadvantages and practical applications. (16)
(CO3)
(PO2)