

MAHATMA GANDHI UNIVERSITY, KOTTAYAM

MGU-UGP (HONOURS)

SECOND SEMESTER PRACTICAL EXAMINATION

MG2DSCPHY100 – Modern Physics

Duration:02hrs

Maximum Marks: 35

Record:5 marks

Attempt the question marked 'X'. Change of question is not allowed: 30 marks

1. Measure the refractive index of a given liquid(water) using internal reflection and laser beam. [S,A,An][6]
2. Obtain the angle of the given prism using spectrometer. [S,A,An][6]
3. Measure the thickness of a thin wire using a travelling microscope [S,A,An][6]
4. Study the variation of voltage and current output of a solar cell when exposed to different intensities. [S,A,An][6]
5. Verify the Stefan's law using incandescent bulb. [S,A,An][6]
6. Measure the least count of a stainless-steel ruler using laser. [S,A,An][6]
7. Using Python program, plot the black body spectrum at different temperatures. [S,A,An][6]
8. Plot the superposition of $y = \sin(x) + \sin(8x)$ using Python. Analyze the waveform and describe its characteristics. [S,A,An][6]
9. Study the climate parameters (temperature, pressure, humidity) at your location from satellite data (MOSDAC) and graphically represent its temporal variation [S,A,An][6]
10. Using GeoGebra, plot the waveforms for $y = \sin(3x)$ and $y = \cos(3x)$. Analyze their phase relationship and describe how they are shifted with respect to each other. [S,A,An][6]