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DUMKAL COLLEGE

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(Govt. Aided, Affiliated to the: University of Kalyani Included under section 2(f) & 12 (B) of UGC Act.)

Date:15.05.2026

NOTICE [Department of Physics]

For Submission of Assignments:

All the students of semester VI are hereby instructed to submit their assignments according to the following topics. The Hard copy of assignments must be submitted to the Department of Physics on 06.06.2026 at 11:30 pm onwards. No assignments will be accepted after that day.

Assignment for Semester VI Major Course PHY-M-T-8 [Electronics]

1. Write a short note on amplifiers (a) class A, (b) Class B, (c) Class C, (d) Class AB.
2. Write a short note on oscillators, (a) Barkhausen's Condition, (b) R-C phase shift oscillator, (c) Hartley and Colpitt oscillator.

Assignment for Semester VI Major Course PHY-M-T-9 [Solid state physics]

1. Define Miller Indices. Explain the step-by-step procedure to determine the Miller indices of a crystal plane.
2. What are phonons? Distinguish clearly between Acoustical Phonons and Optical Phonons.
3. Discuss Einstein's theory of specific heat of solids. What are its main achievements and limitations?

Assignment for Semester VI Major Course PHY-M-T-10 [Mathematical Physics-II]

1. Derive Euler's Formulas for the Fourier coefficients a_0 , a_n , and b_n for a general periodic function $f(x)$ defined in the interval $[-\pi, \pi]$. Clearly state the orthogonality relations used during your derivation.
2. Set up the one-dimensional wave equation for a stretched string fixed at both ends. State the necessary boundary conditions required to find its unique solution.
3. State and derive the Cauchy-Riemann (C-R) conditions in Cartesian coordinates for a function $f(z) = u(x,y) + iv(x,y)$ to be analytic.

Principal
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