

B.B.M. COLLEGE BALIAPUR

DHANBAD

Internal Exam – 2022

SEMESTER – IV

Class – B.Sc. (Hons) Time – 1hr

Sub. – Physics (Core-8) F.M. – 15

Answer any two question

1. Explain complex number with graphical representation.
2. State and prove cauchy's Integral formula.
3. Write brief notes on inverse Laplace transform.
4. Write a short note on poverty alleviation policies.

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SEMESTER – IV

Class – B.Sc. (Hons) Time – 1hr

Sub. – Physics (Core-9) F.M. – 15

Answer any two question

1. Establish the relation between Einstein's 'A' and 'B' coefficients.
2. (a) The half life of a radioactive substance is 15 hours. Calculate the period in which 12.5% of the initial quantity of the substance will be left over. (given $\log 8 = 0.9031$)

(b) Write the laws of radioactive decay.
(c) Define group velocity and phase velocity. Establish the relation between them.

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Internal Exam – 2022

SEMESTER – IV

Class – B.Sc. (Hons) Time – 1hr

Sub. – Physics (Core-10) F.M. – 15

Answer any two question

1. State and prove De Morgan's theorems using logic gates and corresponding truth tables.
2. Prove the following using logic circuits and truth table

(a) $A + AB = A + B$
(b) $A + B = A \cdot B$
3. Draw the logic symbol of NOR gate and explain its operation with truth table.

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Internal Exam – 2022

SEMESTER – IV

Class – B.Sc. (GE/GEN) Time – 1hr

Sub. – Physics F.M. – 15

Answer any two question

1. Define group velocity and phase velocity
Establish the relation between them.
2. Give the theory of newton's ring and
describe an experiment to determine the
wave length of light using these rings.
3. Define interference of light and explain
division of amplitude and division of wave
from with example.