B.B.M. COLLEGE, BALIAPUR, DHANBAD

Internal Exam – 2024

SEMESTER – I to IV

Special Exam

Class – B.Sc. (Math)   Time –
Sub. – GE Paper -II   F.M. – 20 each Sem.

SEMESTER – I

Answer any two question

Time – 1 Hr   F.M. - 20

(1) state and prove Leibnitz's theorem

(2) State and prove Euler's theorem on homogeneous functions.

(3) using €- δ definition , prove that the function

$f(x) = \int x^2 \sin\frac{1}{x}$ if $x \neq o$

O , if   x = o

Is continuous at x=o.

(4) Evaluate the integral $\int_{o}^{\frac{\pi}{2}} sin^n x dx$.

(5) find the asymptote of the user $x^3 + y^3 = 3axy$.

SEMESTER – II

Answer any two question

Time – 1 Hr   F.M. - 20

(1) solve : $p^2 – 7p + 12 = o$.

(2) solve : $\frac{d^2y}{dx^2} + y = Sin2x$.

(3) solve by charpit's method. $(p^2+q^2)y=qz$.

(4) solve by the method of variation of parameters, the equation

$\frac{d^2y}{dx^2} + a^2y = secax$

(5) solve $z(xp-yq)= y^2-x^2$.

SEMESTER – III

Answer any two question

Time – 1 Hr   F.M. - 20

(1) define countable and uncountable sets.

(2) state and prove Bolzano – weirstrass theorem for sequoias .

(3) test the series converge or diverge whose general teem is

$Un = \sqrt{n^4 + 1} - \sqrt{n^4 + 1}$.

(4) prove that the series

$\frac{1}{1^p} + \frac{1}{2^p} + \frac{1}{3^p} + \text{------} + \frac{1}{n^p}$ ------ is convergent if P>1 and divergent if P≤1 .

(5) state and prove Leibuitz Test.

SEMESTER – IV

Answer any two question

Time – 1 Hr   F.M. - 20

(1) define a group with example .

(2) state and prove Lagrange's theorem .

(3) define a ring with examples.

(4) Prove that every cyclic group is an Abetian Group.

(5) Define subrings and ideals.