



TAMIL NADU OPEN UNIVERSITY
Chennai-15.
B.Sc Maths with Computer Applications - Second Year
SPOT ASSIGNMENT

COURSE	COURSE CODE	ADMISSION YEAR
Groups and Rings	BMC – 21	CY 2018

Time: 1 Hour

Total Marks: 25

Answer all questions.

- 1 Define normal subgroup of a group G and give an example. Also show that if a group G has exactly one subgroup H of given order, then H is a normal subgroup of G . 9 Marks
- 2 Define Field, Integral domain with examples and prove that any field is an integral domain. 8 Marks
- 3 Show that the Gaussian ring $Z[i] = \{a + bi / a, b \in Z\}$ is an Euclidean domain. 8 Marks



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COURSE	COURSE CODE	ADMISSION YEAR
Classical Algebra and Numerical methods	BMC – 22	CY 2018

Time: 1 Hour **Total Marks: 25**

Answer all questions.

- 1 Solve the equation $x^5 + 4x^4 + x^3 + x^2 + 4x + 1 = 0$. 8 Marks

- 2 Use Newton ó Raphson method to obtain a root correct to three decimal places of the equation $x^3 + 3x^2 ó 3 = 0$. 8 Marks

- 3 Given the differential equation $\frac{dy}{dx} = \frac{x^2}{y^2 + 1}$ with $y(0) = 0$. 9 Marks

Obtain $y(0.25)$, $y(0.5)$ and $y(1.0)$ correct to four decimal places by Picard's method of successive approximations.



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COURSE	COURSE CODE	ADMISSION YEAR
Programming in C and C++	BMC – 23	CY 2018

Time: 1 Hour **Total Marks: 25**

Answer all questions.

- 1 Write a note on Structures and Unions. 8 Marks
- 2 Write a program to find the roots of a quadratic equation using a function and use it in the main program to manipulate the roots. 9 Marks
- 3 Write a note on Constructors and Destructors. 8 Marks