Directorate of Distance Education
Swami Vivekanand Subharti University
II Year

BACHELOR OF ARTS

B.A(Mathematics)

B.A(Math)/ASSIGN/ III/SEM/A-2020-21

Assignments

(For JUNE Academic Batch-2020-21)

B.A(Math)-301, B.A(Math)-302,

Directorate of Distance Education
Swami Vivekanand Subharti University
II Year

Detail of Program

Directorate of Distance Education
Swami Vivekanand Subharti University
II Year

Course Code   :   BA

Course Title   :   Algebra I

Assignment No.   :   BA-Math-1/ A-2020-21

Maximum Marks   :   15

Words   :   100 words

Attempt all questions.

All questions carry equal marks.

Q.1. Find the condition that the sum of two roots of the equation $x^4 + px^3 + qx^2 + rx + s = 0$

be equal to the sum of the other two roots.

Q.2 Show that $i \log\left(\dfrac{x-i}{x+i}\right) = \pi - 2\tan^{-1} x$

Q.3 Evaluate: $u = \log \tan\left(\dfrac{\pi}{4} + \dfrac{\theta}{2}\right)$ then prove that **(i)** $\sinh u = \tan \theta$ **(ii)** = tanh u=sin

Q.4. Find the sum of the series $\tan^{-1}\dfrac{1}{3} + \tan^{-1}\dfrac{1}{7} + \tan^{-1}\dfrac{1}{13} + - - - - - - - - n$ terms.

Q.5. Show that the equations $x + 2y - z = 3$, $3x - y + 2z = 2$, $x - y + z = -1$ are consistent

and solve them

Directorate of Distance Education
Swami Vivekanand Subharti University
II Year

Course Code   :   BA

Course Title   :   Algebra II

Assignment No.   :   BA-Math-2/ A-2020-21

Maximum Marks   :   15

Words   :   100 words

Attempt all questions.

All questions carry equal marks.

Q.1. Give three differences between determinant and matrix each with example.

Q.2. Define the dihedral group (D4, *) and give its composition table.

Q.3. If S = N × N, the set of ordered pairs of positive integers with the operation * defined

by (a, b) * (c, d) = (ad + bc, bd) and if f: (S, *) → (Q, +) is defined by f(a, b) = a/b, show that f is a semi group homomorphism.

Q.4. Write a short note on Homomorphism.

Q.5. Describe the Finite dimensional vector spaces.