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**The Assam Royal Global University, Guwahati**

**Royal School of Commerce**

**B.Com. 4<sup>th</sup> Semester**

**Semester End Examination, June 2023**

**Course Title : Business Mathematics**

**Course Code : COM042C401**

**Time: 3 Hours**

**Maximum Marks: 70**

**Note: Attempt all questions as per instructions given.**

*The figures in the right-hand margin indicate marks.*

**Section – A**

**1. Attempt All Questions.**

**2 x 8**

- If the third and sixth terms of an AP are 7 and 13 respectively, find the first term and common difference.
- Find the value of  ${}^7P_4 - {}^8P_3$ .
- Find the interest on Rs. 10,200 for 7 years and 6 months @ 6% p.a.
- State the different types of annuity.
- Find  $\frac{dy}{dx}$  when  $y = (x + 2)(x + 1)^2$
- Define limit of a function
- Show that the point (3,4) is on the line  $2x+y-10=0$ .
- Write the properties of determinants for which the value of the determinants become zero.

**Section – B**

**2. Attempt any two of the following:**

**7 x 2**

- Ms. Tripti saved Rs. 16,500 in ten years. In each year after the first he saved Rs. 100 more than he did in the preceeding year. How much did he save in the first year?
- In how many ways the letters of the word DAUGHTER can be arranged keeping the vowels together?
- There are two groups in a question paper with five questions in each group. An examinee is to answer any six questions. But he cannot answer more than four questions from either of the groups. In how many ways an examinee can select questions?

**3. Attempt any two of the following:**

**7 x 2**

- A person deposits Rs. 500 at the beginning of each quarter in his savings account in a bank which pays 8% interest per annum compounded quarterly. Find the balance in his account at the end of three years.
- A certain principal gets doubled in 12 years. What is the rate of interest (compound interest)?

*P.T.O*