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**MAT 204**

**COMPUTER SCIENCE**

**18/ENG02/014**

1 -3 6

4 0 2

8 5 1

A =

1 1 2

1 -2 1

0 3 -4

B =

0 4 3

6 -7 1

1 -3 2

C =

1. **RANK OF A**

1 -3 6

4 0 2

8 5 1

|A|=

|A|= 1(0 - 10) +3 (4 - 16) + 6(20 - 0)

|A|= -10 - 36 + 120 = 74 IT IS NOT EQUAL TO 0; HENCE THE RANK OF **A** IS **3**

1. **RANK OF B TRANSPOSE**

 |B|=

1 1 0

1 -2 3

2 1 -4

|B|= 1(8 + 3) – 1(-4 - 6) + 0(1 + 4)

|B|= 5 + 10 + 0 = 15 IT IS NOT EQUAL TO 0; HENCE THE RANK OF **B TRANSPOSE** IS **3**

1. **RANK OF (A + C) TRANSPOSE**

1 1 9

10 - 7 3

9 2 3

|A+C|=

1 10 9

1 -7 2

9 3 3

|A+C|T =

|A+C|= 1(-21 - 6) – 10(3 - 18) + 9(3 + 63)

|A+C|= -27 + 150 + 594 = 717

IT IS NOT EQUAL TO 0; HENCE THE RANK OF **(A + C) TRANSPOSE** IS **3**

1. **RANK OF (B + C)**

1 5 5

7 -9 2

1 0 -2

|B+C|=

|B+C|= 1(18 - 0) -5(-14 -2) + 5(0 + 9)

|B+C|= 18 + 80 + 45 = 143

IT IS NOT EQUAL TO 0; HENCE THE RANK OF (**B + C**) IS **3**

1. **RANK OF (A+B+C)**

2 2 11

11 -9 4

9 5 -1

|A+B+C|=

| A+B+C |= 2(9 - 20) – 2(-11 - 36) + 11(55 + 81)

| A+B+C |= -22 + 94 + 1496 = 1568

IT IS NOT EQUAL TO 0; HENCE THE RANK OF (**A+B + C**) IS **3**