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**MAT 204**

**COMPUTER SCIENCE**

**18/SCI01/014**

**QUESTION 1**

1 2 8

4 7 6

9 5 3

1. |X|=

|X|= 1(21 - 30) – 2(12 - 54) + 8(20 - 63)

|X|= -9 + 84 – 344 = - 269

|X|NOT EQUAL TO 0, Therefore, Matrix X is a Non-Singular matrix

1. |Y|=

0 5 0

-3 - 7 -1

2 1 9

|Y|= 0(171 + 1) – 5(-27 + 2) + 0(-3 + 14)

|Y|= 0 + 125 – 0 = 125

|Y|NOT EQUAL TO 0, Therefore, Matrix Y is a Non-Singular matrix

1. RANK OF Y

0 5 0

-3 - 7 -1

2 1 9

|Y|=

|Y|= 0(171 + 1) – 5(-27 + 2) + 0(-3 + 14)

|Y|= 0 + 125 – 0 = 125 IT IS NOT EQUAL TO 0; HENCE THE RANK OF Y IS **3**

1 7 8

1 0 5

11 6 12

1. |X+Y|=

|X+Y|= 1(0 - 30) – 7(12 - 55) + 8(6 - 0)

|X+Y|= -30 + 301 + 48 = 319

|X+Y|NOT EQUAL TO 0, Therefore, Matrix **X+Y** is a Non-Singular matrix

1. |5Y|=

0 25 0

-15 -35 -5

10 5 45

|5Y|= 0(-1575 + 25) – 25(-675 + 50) + 0(-75 + 350)

|5Y|= -0 + 15625 – 0 = 15625

|5Y|NOT EQUAL TO 0, Therefore, Matrix 5Y is a Non-Singular matrix

**QUESTION 2**

T(m)= 1

T(h)= 1

T(i)= 3

T(k)= 5

T(o)= 9

T(r)= 9