

Name: \_\_\_\_\_ Reg No: 

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**Quiz II**

**Sikkim Manipal Institute of Technology**  
**Department of Mathematics**  
**BCA (II Sem)**  
**Subject: Mathematics II (MA 1204)**  
**Quiz II**

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Dur: 15 mins

29.03.2019

Max: 5 marks

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**Instructions**

- (i) Answer all the questions.
  - (ii) Each questions carry **ONE** mark (No partial marking)
  - (iii) Use only the back side of this question paper for rough work.
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1. The determinant of the matrix  $\begin{bmatrix} 1 & 0 \\ 0 & 2 \end{bmatrix}$  is \_\_\_\_\_.

- (a) 1                      (b) 2                      (c) 3                      (d) 4

2. Which one of the following is true about the matrix  $A = \begin{bmatrix} 3 & 0 \\ 1 & 1 \end{bmatrix}$ ?

- (a) Inverse of  $A$  exists                      (b) Determinant of  $A$  is 2  
(c) Inverse of  $A^2$  does not exists                      (d) None of these

3. For an infinite series  $\sum_{n=1}^{\infty} u_n$ , which of the following statement is true?

- (a)  $\sum_{n=1}^{\infty} u_n$  converges implies that  $\lim_{n \rightarrow \infty} u_n = 0$   
(b) Always Ratio test works to check the convergence  
(c) Always root test can be used to check the convergence  
(d) None of these

4. The series  $\sum_{n=1}^{\infty} \frac{2}{n^2}$  is \_\_\_\_\_

- (a) Diverges                      (b) Converges                      (c) Oscillates                      (d) None of these

5. Which can be an appropriate test for the series  $1 - \frac{1}{2} + \frac{1}{3} - \frac{1}{4} + \dots$  in the following?

(a) Comparison Test

(b) Cauchy's Root Test

(c) Leibnitz's Test

(d) D'Alembert's Ratio Test

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1. (b) 2
2. (a) Inverse of  $A$  exists
3. (a)  $\sum_{n=1}^{\infty} u_n$  converges implies that  $\lim_{n \rightarrow \infty} u_n = 0$
4. (b) Converges
5. (c) Leibnitz's Test

