

**PARUL UNIVERSITY**  
**FACULTY OF ENGINEERING & TECHNOLOGY**  
**B.TECH MIDSEM EXAMINATION**  
**3<sup>rd</sup> SEMESTER**  
**ACY-2022-23**

Subject Name (Code): Mathematics-III (203191207)

Date: 09/08/2022

Time: 2:30 PM TO 4:00PM

Branch: EE/EC

Total Marks: 40

Q.1 (A) Choose the correct option

Marks

05

1) Z Transform of  $2^n$  is \_\_\_\_\_

- (a)  $\frac{z}{(z-2)}$                       (b)  $\frac{1}{(z+2)}$   
(c)  $\frac{z}{(z+2)}$                       (d)  $\frac{1}{(z-2)}$

2) Z transform of  $\frac{1}{n!}$  is \_\_\_\_\_

- (a)  $e^{-\frac{1}{z}}$                               (b)  $e^{\frac{1}{z}}$   
(c)  $e^z$                                       (d)  $e^{-z}$

3) Newton's first divided differences  $[x_1, x_2] =$  \_\_\_\_\_

- (a)  $y_2 - y_1$                               (b)  $\frac{y_2 - y_1}{x_1 - x_2}$   
(c)  $\frac{y_2 - y_1}{x_2 - x_1}$                       (d) None of these

4)  $1 + \Delta =$  \_\_\_\_\_

- (a) E                                      (b)  $E^{-1}$   
(c)  $\frac{1}{E}$                                       (d)  $\frac{1}{E-1}$

5) Which of the following statements is true about the arithmetic mean of two regression coefficients?

- (a) It is less than the correlation coefficient  
(b) It is equal to the correlation coefficient  
(c) It is greater than or equal to the correlation coefficient  
(d) It is greater than the correlation coefficient