## **TaylorSeriesQuestions**

May 26, 2020

## **Question Set**

Q1. The approximate value of  $(27.27)^{1/3}$ 

a)3 + 0.01 - 
$$\frac{0.0001}{3}$$
 + ...

$$b)3 + \frac{0.01}{3} - \frac{0.0001}{33} + .$$

$$c)3 + 0.01 - 0.0001 +$$

a) 
$$3 + 0.01 - \frac{0.0001}{3} + \dots$$
  
b)  $3 + \frac{0.01}{3} - \frac{0.0001}{3^2} + \dots$   
c)  $3 + 0.01 - 0.0001 + \dots$   
d)  $3 - 0.01 + \frac{0.0001}{3} + \dots$ 

Q2. 
$$\int_{-1}^{1} e^{-x^{2}} dx$$
 is a) 
$$\sum_{n=0}^{\infty} \frac{(-1)^{n}}{2n+1}$$
 b) 
$$2 \sum_{n=0}^{\infty} \frac{(-1)^{n}}{2n+1}$$
 c) 
$$2 \sum_{n=0}^{\infty} \frac{(-1)^{n}}{2n-1}$$
 d) 
$$\sum_{n=0}^{\infty} \frac{(-1)^{n}}{2n-1}$$

a) 
$$\sum_{n=1}^{\infty} \frac{(-1)^n}{(-1)^n}$$

$$n=0$$
  $2n+1$   
 $n=0$   $2n+1$   
 $n=0$   $n=0$ 

$$\sum_{n=0}^{\infty} 2n+1$$

d) 
$$\sum_{n=0}^{\infty} \frac{2n-1}{(-1)^n}$$

Q3. The approximate value of e \* cos(1) is

a) 
$$1 + 1 + \frac{1}{2} - \frac{1}{6} + \frac{1}{4} - \frac{1}{12}$$

b)1+1-
$$\frac{1}{3}$$
+ $\frac{1}{6}$ - $\frac{4}{4}$ + $\frac{1}{8}$ 

a) 1 + 1 + 
$$\frac{1}{2}$$
 -  $\frac{1}{6}$  +  $\frac{1}{4}$  -  $\frac{1}{12}$   
b) 1 + 1 -  $\frac{1}{3}$  +  $\frac{1}{6}$  -  $\frac{1}{4}$  +  $\frac{1}{8}$   
c) 1 + 1 +  $\frac{1}{3}$  -  $\frac{1}{6}$  +  $\frac{1}{4}$  -  $\frac{1}{8}$   
d) 1 + 1 -  $\frac{1}{2}$  +  $\frac{1}{6}$  -  $\frac{1}{4}$  +  $\frac{1}{12}$ 

$$d(1) + 1 - \frac{1}{2} + \frac{1}{6} - \frac{1}{4} + \frac{1}{12}$$

Q4. Approximate value of  $\Pi$  is

a)3.1415926

b)
$$4 - \frac{4}{3} + \frac{4}{5} - \frac{4}{7} + \dots$$

c)
$$\frac{3}{2}(1+\frac{1}{2}+\frac{1}{4}+\frac{1}{8}+...)$$

$$\begin{array}{l} \text{b)} 4 - \frac{4}{3} + \frac{4}{5} - \frac{4}{7} + \dots \\ \text{c)} \frac{3}{2} (1 + \frac{1}{2} + \frac{1}{4} + \frac{1}{8} + \dots) \\ \text{d)} 3 (1 - \frac{1}{2} + \frac{1}{4} - \frac{1}{8} + \dots) \end{array}$$

Q5.Find 
$$\int_0^x \frac{\sin(t)}{t} dt$$

a)
$$\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n-1}}{(2n+1)(2n+1)!}$$

b) 
$$\sum_{n=0}^{\infty} \frac{x^{2n+1}}{(2n+1)(2n+1)!}$$

c)
$$\sum_{n=0}^{\infty} (-1)^n \frac{x^{2n+1}}{(2n+1)(2n+1)!}$$

$$\begin{array}{c} \text{Q5.Find } \int_0^x \frac{\sin(t)}{t} dt \\ \text{a)} \sum_{n=0}^\infty (-1)^n \frac{x^{2n-1}}{(2n+1)(2n+1)!} \\ \text{b)} \sum_{n=0}^\infty \frac{x^{2n+1}}{(2n+1)(2n+1)!} \\ \text{c)} \sum_{n=0}^\infty (-1)^n \frac{x^{2n+1}}{(2n+1)(2n+1)!} \\ \text{d)} \sum_{n=0}^\infty (-1)^n \frac{x^{2n-1}}{(2n-1)(2n+1)!} \end{array}$$

 $\mathbf{key}$ : a,a,d,(a,b),c