

1stINTERNAL EXAM (SSIT POLYTECHNIC) 2023-2024(SUMMER)

SUBJECT- Engineering Mathematics-II

BRANCH-Civil Engg/ EE Engg/ EE(I&C) Engg/Mech Engg (2ndsem)

TIME:1 HOURS

MAXIMUM MARKS:20

1. Answer all the question

2×5 =10

(a) Find $\frac{dy}{dx}$, $y=5x^4+3x^{3/2}+6x$.

(b) Find the value of $\vec{A} \times \vec{B}$, $\vec{A} = 3\hat{i} + 2\hat{j} + 4\hat{k}$, $\vec{B} = \hat{i} + 4\hat{j} + 3\hat{k}$

(c) Find $\lim_{x \rightarrow 2} \frac{x^2 - 3x + 2}{x^2 + x - 6}$.

(d) Find the Integration value of $I = \int \frac{x^2 + 2}{x^2 + 1} dx$

(e) Find the value of $\int a^{mx} dx$

2. Answer all question

5×2=10

(A) Find that point A,B,C with position Vectors $(2\vec{a} + \vec{b} - \vec{c})$, $(3\vec{a} - 2\vec{b} + \vec{c})$, $(\vec{a} + 4\vec{b} + 3\vec{c})$ are collinear.

(B) Find the value of $\lim_{x \rightarrow 2} \frac{x^3 - 4x^2 + 4x}{x^2 - 4}$.

***** ALL THE BEST *****