

BHARATI VIDYAPEETH COLLEGE OF ENGG.

TERM TEST I (-2015-2016)

SETA

Class-FE

Marks-20

Sub- Applied Maths I

Time -1Hr.

1. Attempt any five.

- a. Evaluate $\frac{3+2i}{(2+i)(1-3i)}$ in the form $x+iy$ 2
- b. Evaluate $(1+i\sqrt{3})^8 + (1-i\sqrt{3})^8$ 2
- c. solve $x^6 + 1 = 0$ 2
- d. If $y = \sin^2 x \cos^2 x$ find y_n . 2
- e. P.T $\tanh^{-1}(\sin\theta) = \cosh^{-1}(\sec\theta)$ 2
- f. find Value of $\log(-5)$ & $\text{Log}(1+i)$. 2

2. Attempt any one.

a. P.T $\tan 5\theta = \frac{5 \tan\theta - 10 \tan^3\theta + \tan^5\theta}{1 - 10 \tan^2\theta + 5 \tan^4\theta}$ 5

or

b. Express $\sin^7\theta$ in series of sines of multiple of θ 5

3. Attempt any one.

a. If $x = \tan \log y$ P.T $(1+x^2)y_{n+1} + (2nx - 1)y_n + n(n-1)y_{n-1} = 0$ 5

or

b. If $u = e^{xyz}$ Find $\frac{\partial^3 u}{\partial x \partial y \partial z}$ 5