M&C MID-II IMP BITS

1) If $u = \tan^{-1}(\frac{y}{x})$, then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} =$ _____

2) If $u=x^2y\ \emptyset\ (\frac{y}{x})$ then $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} =$ _____

3) $\int_0^\infty x^3 e^{-x}\, dx =$ -----

4) If $f(0) = 1, f^{i}(0) = 1, f^{ii}(0) = 1, f^{iii}(0) = 1$ *Then* The Maclaurins Expansion of $f(x)$ *is* _____

5)The value of $\Gamma(7/2)$ _____

6) What is the value of c in Rolle's theorem for f(x)=$x + \frac{1}{x}$ in $[\frac{1}{2},2]$ is _____

7) $\int_0^1 \int_1^2 xy\, dy\, dx =$ _____

8) The value of C of Cauchy's mean value theorem for the functions $f(x) = e^x$ and $g(x) = e^{-x}$ in$[a, b]$ is_____

9) $\int_0^{\frac{\pi}{2}} Sin^7\theta\, d\theta =$-------

10) If $If\ u = \frac{y}{x}, v = xy\ \ Then\ \frac{\partial(u,v)}{\partial(x,y)} =$ ----------

11) $\int_0^\infty x^6 e^{-2x}\, dx =$ -----

12) $\int_0^2 \int_0^x y\, dy\, dx =$--------

13) The Value of $\int_0^1 x^7(1-x)^3\, dx$ *is*_____

14) *Evaluate* $\int_0^\infty e^{-2x}\, x^4\, dx =$ _____

15) If u = 3x+5y and v = 4x-3y then $\frac{\partial(u,v)}{\partial(x,y)} =$ _____

16) The value of C of Cauchy's mean value theorem for the functions $f(x) = Sinx$ and $g(x) = Cosx$ in$[a, b]$ is_____

17) $\frac{\partial(u,v)}{\partial(x,y)} * \frac{\partial(x,y)}{\partial(u,v)} =$ _____

18) $\int_0^1 \int_1^2 \int_2^3 xyz\ dy\, dx\, dz =$ _____

19) The Taylor series expansion for the function $f(x) = \frac{-1}{1+x}$, *around* $x = 0$ *is*_____

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20) If z is a homogeneous function of degree n, then

$x^2z_{xx}+2xyz_{xy}+y^2z_{yy}$_____

21) The value of C of Lagrange's mean value theorem for $f(x) = e^x$ in[0,1]

is_____

22) Use the Cauchy's mean value theorem for f(x)=x^2 and g(x)=x^3 defined in the interval [1,2] is_____

23) *Evaluate* $\int_0^{\frac{\pi}{2}} \sin x^7\, dx =$ _____

24) If $u = \frac{xy}{x+y}$, *Then* $x\frac{\partial u}{\partial x} + y\frac{\partial u}{\partial y} =$_____

25) The minimum value of $x^2 + y^2 + z^2$given that $x + y + z = 3a$ is _____

26) The degree of the Homogeneous Function $z = \frac{\sqrt{x}+\sqrt{y}}{x+y}$ _____

27) $\int_0^{\frac{\pi}{2}} Sin^2\theta\, Cos^4\theta\, d\theta =$-------

28) Write the Relation Between Beta and Gamma function_____

29) The value of C of Rolle's Theorem in (-1,1) for $f(x) = x^3 - x$_____

30) If u = $x^2 - 2y$, v = x + y, then $\frac{\partial(u,v)}{\partial(x,y)}$ _____

31) The value of C of Lagrange's mean value theorem for f(x) = x^2 in [1,5]

_____

32) The Value of $\Gamma(4.5)$_____

33) If $f(x, y) = xy + (x - y)$ The Stationary Points are_____

34) The value of $B(1,2) + B(2,1)$ is_____

35) If $x = rcos\theta, y = rsin\theta, z = zfind \frac{\partial(x,y,z)}{\partial(r,\theta,z)} =$ _____

36) $\int_0^3 \int_0^2 xy\, dx\, dy =$-------

37) The Value of $\int_0^1 x^5(1-x)^3\, dx$ *is*_____

38) If $ln - m^2 > 0\ and l < 0$ at (a_1,b_1)_____

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