

SURENDRANATH COLLEGE

INTERNAL ASSESSMENT

SEMESTER-1, 2018-19

SUBJECT-MTMG

CC/GE-1

Time- 30 minutes

Full Marks- 10

CU Reg. No.-	SECTION-	ROLL NO.-
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MARKS OBTAINED	Signature of Examiner- With date
MARKS CONVERTED TO 10	Approved by HOD- With date

Question Booklet

Q No.	Question	Mark s
1.	<p>The modulus of z, where $z = 1 + i \tan \theta$, $\pi/2 < \theta < \pi$ is:</p> <p>a) $\sec \theta$ <input type="checkbox"/> b) $-\sec \theta$ <input type="checkbox"/></p> <p>c) $1 + \tan^2 \theta$ <input type="checkbox"/> d) none of these <input type="checkbox"/></p>	
2.	<p>If $1, \alpha_1, \alpha_2, \dots, \alpha_{n-1}$ be the roots of the equation $x^n - 1 = 0$, then the value of $(1 - \alpha_1)(1 - \alpha_2) \dots (1 - \alpha_{n-1})$ is :</p> <p>a) 1 <input type="checkbox"/> b) 0 <input type="checkbox"/></p> <p>c) n <input type="checkbox"/> d) $n-1$ <input type="checkbox"/></p> <p>Singular solution of $p = \log(px - y)$ is</p>	

3.

a) $x + y = x \log x$ b) $x - y = \log x$

c) $x + y = \log x$ d) $y - x = \log x$

Particular integral of the differential equation: $(D^2 - 4D + 4)y = \cosh 2x + 3$ is :

4.

i) $\frac{x}{4}e^{2x} + e^{-2x}$

ii) $\frac{x^2}{4}e^{2x} + \frac{3}{4}$

iii) $\frac{e^{-2x}}{32} + \frac{3}{4}$

iv) $\frac{x^2}{4}e^{2x} + \frac{e^{-2x}}{32} + \frac{3}{4}$

The distance between the pair of parallel lines $9x^2 - 24xy - 16y^2 - 12x + 16y - 12 = 0$ is (in unit)

5.

(a) 5 (b) 8

(c) $8/5$ (d) $5/8$

The equation $x^2 + 2\sqrt{3}xy - y^2 - 2 = 0$ is transformed to when the axes of inclination tothe original axes is a) 30° b) 60°

6.

c) 45° d) 90°

If the sum of the slopes of the lines given by $cx^2 - 2xy - 7y^2 = 0$ is four times their product, then c has the value

7.

(a) 1 (b) -1

(c) 2 (d) -2

If $f(x) = |x|, x \in \mathbb{R}$ then Which of the following statement is correct:

8.

- a) f is continuous only at $x = 0$
- b) f is not continuous at $x = 0$
- c) f is differentiable only at $x = 0$
- d) f is continuous but not differentiable at $x = 0$

Which of the following statement is correct:

9.

- a) '0' is neither a rational nor an irrational
- b) The value of ' π ' is $\frac{22}{7}$.
- c) ' e ' is rational.
- d) ' e ' is irrational

Which of the following statement is correct:

10.

- a) If n is a natural number then \sqrt{n} is a rational number
- b) If n is a natural number then \sqrt{n} is an irrational number
- c) There are natural numbers n such that \sqrt{n} are rational number but not true for all natural numbers n .
- d) Any irrational number can be represented as \sqrt{n} where n is a natural number.

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