

SURENDRANATH COLLEGE

INTERNAL ASSESSMENT

SEMESTER-1, 2018-19

SUBJECT-STSA

CC-2

Time-30 MINS

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

	<p>Answer any 10 out of 15.</p> <p>1. Prove that $F(-\infty)=0$ and $F(\infty)=1$ where F is the distribution function .</p> <p>2. A continuous random variable has p.d.f $f(x)=3x^2, 0 \leq x \leq 1$. Find a and b such that</p> <p>3. i) $P(x \leq a) = P(X > a)$. ii) $P(X > b) = 0.05$.</p> <p>4. A random variable X has the p.d.f $f(x) = Ax e^{-(hx)^2}, x > 0$. Find the factor A and its distribution function.</p> <p>5. Ten numbers are selected from 30 numbers 1,2,...,30 each with equal probability and Without replacement. Find the expectation of the sum of the selected numbers.</p> <p>6. A and B roll a pair of unbiased dices alternatively. A wins if he throws a 6 before B throws a 7, B wins if he throws a 7 before A throws a 6. If A begins the game find the expected number</p> <p>7. of trials needed for his win.</p> <p>8. Write down classical definition of probability.</p> <p>9. Write down the three axioms of probability</p> <p>10. Let X be a random variable having mean 3 and variance 4. Find out $E(X^2+3X+2)$</p> <p>A fair coin is tossed 3 times. Find out the probability of getting no head.</p> <p>11. When a random variable X is called symmetric about c?, c be any constant.</p> <p>12. Let $P(A) = \frac{1}{2}, P(B^c) = \frac{2}{5}$, find $P(A \cup B)$</p> <p>13. State the Markov's Inequality.</p> <p>14. State Chebyshev's Inequality</p> <p>15. Let X follows binomial (5,0.4). Find $P(X=2)$ Draw the venn diagram of $A \cup B^c$</p>	1X10
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Answer

<i>Q No.</i>	<i>Answer</i>
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