TE EXTC RSA 2021-22 Test 1 Examination

Total points 20/20

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0 of 0 points

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Answer the following questions 20 of 20 points

✓ A problem in mathematics is given to three students A, B and C. If the probability of A solving the problem is ½ and B not solving it is ¼. The whole probability of the problem being solved is ⁶³⁄₆₄ then what is the probability of solving it? * 1/1

- ○ 1/2
- ◉ 7/8 ✓
- ○ 1/8
- ○ 1/64

✓ Let A and B be two events such that P(A) = ⅕ While P(A or B) = ½. Let P(B) = P. For what values of P are A and B independent? * 1/1

- ○ 1/10 and 3/10
- ○ 3/10
- ○ 3/10 and 4/5
- ◉ 3/8 only ✓

✓ What is the probability of an impossible event? * 1/1

- (●) 0 ✓
- ( ) Not Defined
- ( ) Insufficient Data
- ( ) 1

✓ Let A and B be two events such that the occurrence of A implies occurrence of B, But not vice-versa, then the correct relation between P(a) and P(b) is? * 1/1

- ( ) P(A)>=P(B)
- ( ) P(A)<P(B)
- ( ) P(A)=P(B)
- (●) P(B)>=P(A) ✓

✓ Three companies A, B and C supply 25%, 35% and 40% of the notebooks to a school. Past experience shows that 5%, 4% and 2% of the notebooks produced by these companies are defective. If a notebook was found to be defective, what is the probability that the notebook was supplied by A? * 1/1

- ○ 11/24
- ○ 13/24
- ◉ 25/69 ✓
- ○ 44/69

✓ Suppose box A contains 4 red and 5 blue coins and box B contains 6 red and 3 blue coins. A coin is chosen at random from the box A and placed in box B. Finally, a coin is chosen at random from among those now in box B. What is the probability a blue coin was transferred from box A to box B given that the coin chosen from box B is red? * 1/1

- ○ 1/2
- ◉ 15/29 ✓
- ○ 14/29
- ○ 7/10

✓ Let X be a random variable with probability distribution function f (x)=0.2 for |x|<1= 0.1 for 1 < |x| < 4= 0 otherwise. The probability P (0.5 < x < 5) is _____ * 1/1

- ○ 0.3
- ○ 0.5
- ○ 0.4
- ◉ 0.8 ✓

✓ If E denotes the expectation the variance of a random variable X is denoted as? * 1/1

- ○ 2E(X)
- ○ E(X^2)
- ◉ E(X^2)-(E(X))^2 ✓
- ○ (E(X))^2

✓ In a Binomial Distribution, if 'n' is the number of trials and 'p' is the probability of success, then the mean value is given by _____ * 1/1

- ○ p
- ○ n
- ◉ np ✓
- ○ np(1-p)

✓ Binomial Distribution is a _____ * 1/1

- (●) Discrete Distribution ✓
- ( ) Irregular Distribution
- ( ) Not a probability distribution
- ( ) Continuous Distribution

✓ In a Poisson Distribution, if ‘n’ is the number of trials and ‘p’ is the probability of success, then the mean value is given by? * 1/1

- ( ) p
- (●) np ✓
- ( ) np(1-p)
- ( ) (np)^2

✓ For a Poisson Distribution, if mean(m) = 1, then P(1) is? * 1/1

- ( ) Indeterminate
- ( ) e
- ( ) e/2
- (●) 1/e ✓

✓ The mean of exponential distribution is given as _____ * 1/1

- (Lambda)^2
- Lambda
- 1/(Lambda)^2
- (●) 1/(Lambda) ✓

✓ Consider a random variable with exponential distribution with λ=1. Compute the probability for P (X>3). * 1/1

- (e)^(-1)
- (●) (e)^(-3) ✓
- (e)^(-2)
- (e)^(-4)

✓ A mobile conversation follows a exponential distribution f (x) = (1/3)e^(-x/3). What is the probability that the conversation takes more than 5 minutes? * 1/1

- (●) e^(-5/3) ✓
- (e^(-5))/3
- 5e^(-15)
- e^(-15)

✓ A random variable X has an exponential distribution with probability distribution function is given by f(x)= 3e^(-3x) for x>0 = 0 otherwise, Find probability that X is not less than 2. * 1/1

- e^(-3)
- e^(-6)-3
- (●) e^(-6) ✓
- e^(-6)-1

✓ The moment generating function of binomial distribution is * 1/1

- M(x(t))=e^(tx)
- (●) M(x(t))=E(e^(tx)) ✓
- M(x(t))=E(x)
- M(x(t))=e^(x)

✓ Linear combination of independent normal variants is also a ..... * 1/1

- Binomial
- (●) Normal ✓
- Exponential
- Chebyschev

✓ What is Gaussian distribution derived from * 1/1

- [x] Normal Distribution ✓
- [ ] Poisson Distribution
- [ ] Rayleigh Distribution
- [ ] Binomial Distribution

✓ What is the mean value in standard notations * 1/1

- [x] Expectation ✓
- [ ] Variance
- [ ] Standard Deviation
- [ ] Skew