National Testing Agency

Question Paper Name :	PROBABILITY AND PROBABILITY DISTRIBUTIONS 29th August 2021 Shift 2
Subject Name :	PROBABILITY AND PROBABILITY DISTRIBUTIONS
Creation Date :	2021-08-29 19:53:49
Duration :	180
Total Marks :	100
Display Marks:	Yes

PROBABILITY AND PROBABILITY DISTRIBUTIONS

Group Number :	1
Group Id :	940918124
Group Maximum Duration :	0
Group Minimum Duration :	120
Show Attended Group? :	No
Edit Attended Group? :	No
Break time :	0
Group Marks :	100
Is this Group for Examiner? :	No

PROBABILITY AND PROBABILITY DISTRIBUTIONS-1

Section Id :	940918180
Section Number :	1
Section type :	Online

Mandatory or Optional :	Mandatory
Number of Questions :	100
Number of Questions to be attempted :	100
Section Marks :	100
Enable Mark as Answered Mark for Review and Clear Response :	Yes
Sub-Section Number :	1
Sub-Section Id :	940918245
Question Shuffling Allowed :	Yes

Question Number : 1 Question Id : 9409188141 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

An event which cannot occur together or simultaneously is called _____.

1. Exhaustive events
2. Equally likely events
3. Mutually exclusive events
4. Sure event

Options :

94091830537. 1

94091830538. 2

94091830539. 3

94091830540. 4

Question Number : 2 Question Id : 9409188142 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If two coins are tossed the exhaustive cases equals to _____.

1. Two
2. Eight
3. Four
4. Sixteen

Options :

94091830541. 1

94091830542. 2

94091830543. 3

94091830544. 4

Question Number : 3 Question Id : 9409188143 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If A = {1, 2, 3, 4}, B = {3, 4, 5, 6}, find A – B?

1. {1, 2, 3, 4, 5, 6}
2. {1, 2, 3, 4}
3. {3, 4, 5, 6}
4. {3, 4}

Options :

94091830545. 1

94091830546. 2

94091830547. 3

94091830548. 4

Question Number : 4 Question Id : 9409188144 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A card is drawn from a well-shuffled deck of 52 cards. Then the probability of drawing a card which is neither a heart nor a king is

1. 0.5200
2. 0.6923
3. 0.8652
4. 0.2323

Options :

94091830549. 1

94091830550. 2

94091830551. 3

94091830552. 4

Question Number : 5 Question Id : 9409188145 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following is not the axioms of the probability:

1. $P(A) \geq 0$
2. $P(S)=1$, where S being the sure event
3. $P(A+B)=P(A)+P(B)$, where A and B are disjoin events
4. $P(AUA')=1$

Options :

94091830553. 1

94091830554. 2

94091830555. 3

94091830556. 4

Question Number : 6 Question Id : 9409188146 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Suppose 70% of all tourist who come to India will visit Agra while 60% will visit Goa and 50% of them visit both Agra and Goa. The probability that a tourist will visit either Goa or Agra is

1. 0.3
2. 0.4
3. 0.8
4. 0.7

Options :

94091830557. 1

94091830558. 2

94091830559. 3

94091830560. 4

Question Number : 7 Question Id : 9409188147 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A problem in Statistics is given to three students A, B and C whose chance of solving it are 1/2, 3/4 and 1/4 respectively, then the probability that the problem will be solved if all of them try independently is

1. 20/32
2. 30/32
3. 25/32
4. 29/32

Options :

94091830561. 1

94091830562. 2

94091830563. 3

94091830564. 4

Question Number : 8 Question Id : 9409188148 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A new estimate of original probabilities of outcomes in view of additional information is called

1. Priori probability
2. Revised probability
3. Conditional probability
4. Marginal probability

Options :

94091830565. 1

94091830566. 2

94091830567. 3

94091830568. 4

Question Number : 9 Question Id : 9409188149 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a bolt factory, machines A, B and C manufacture 25%, 35% and 40% of the total output respectively. Of the total of their output, 5, 4 and 2 percent are defective bolts. A bolt is drawn at random and is found to be defective. What is the probability that it was manufactured by machines B.

1. 0.362
2. 0.406
3. 0.232
4. 1.000

Options :

94091830569. 1

94091830570. 2

94091830571. 3

94091830572. 4

Question Number : 10 Question Id : 9409188150 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Match **List I** with **List II**

Match the correct expression of probabilities on the left:

List I	**List II**
A. P(Φ), where Φ is null set	i. 1-P(A)
B. P(A|B)P(B)	ii. P(A∩B)
C. P(A′)	iii. 1-P(A)-P(B)+ P(A∩B)
D. P(A′∩ B′)	iv. 0

Choose the **correct** answer from the options given below:

1. A-iv, B-ii, C-i, D-iii
2. A-i, B-ii, C-iv, D-iii
3. A-ii, B-iii, C-i, D-iv
4. A-iv, B-iii, C-i, D-ii

Options :

94091830573. 1

94091830574. 2

94091830575. 3

94091830576. 4

Question Number : 11 Question Id : 9409188151 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

For two random variables X and Y, the relation E(XY)=E(X)E(Y), holds good.

1. If X and Y are statistically independent
2. For all X and Y
3. If X and Y are identical
4. If X and Y are correlated

Options :

94091830577. 1

94091830578. 2

94091830579. 3

94091830580. 4

Question Number : 12 Question Id : 9409188152 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X is a random variable and 'a' is constant then E[a(X)] =

1. E(X)
2. aE(X)
3. aX
4. X

Options :

94091830581. 1

94091830582. 2

94091830583. 3

94091830584. 4

Question Number : 13 Question Id : 9409188153 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If $X=I_A$ such that it takes value 1 if A happens, then E(X) =_____.

1. 1
2. 0
3. P(A)
4. I_A

Options :

94091830585. 1

94091830586. 2

94091830587. 3

94091830588. 4

Question Number : 14 Question Id : 9409188154 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X is a random variable, then E(3X+4)=_____.

1. 3E(X)
2. 3^2E(X)
3. 3E(X)+4
4. 3^2E(X)+4

Options :

94091830589. 1

94091830590. 2

94091830591. 3

94091830592. 4

Question Number : 15 Question Id : 9409188155 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If Expectation exists, then |E(X)| _____E|X|,

1. ≥
2. =
3. ≤
4. <

Options :

94091830593. 1

94091830594. 2

94091830595. 3

94091830596. 4

Question Number : 16 Question Id : 9409188156 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If V(X)=1, then V(2X+3) is

1. 5
2. 13
3. 4
4. 8

Options :

94091830597. 1

94091830598. 2

94091830599. 3

94091830600. 4

Question Number : 17 Question Id : 9409188157 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A person enters into a competition of hitting a target. If he hits the target, he gets Rs. 10. Otherwise, he loses Rs. 5. If the probability of hitting the target is 3/10. What is his expectation?

1. 0.5
2. -0.5
3. 1.5
4. -1.5

Options :

94091830601. 1

94091830602. 2

94091830603. 3

94091830604. 4

Question Number : 18 Question Id : 9409188158 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following probability distribution:

X	0	1	2	3	4
P(x)	3/8	1/4	1/8	3/16	1/16

Then the expected value of X is

1. 1.312
2. 2.314
3. 5.645
4. 2.311

Options :

94091830605. 1

94091830606. 2

94091830607. 3

94091830608. 4

Question Number : 19 Question Id : 9409188159 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following probability distribution:

X	0	1	2	3	4
P(x)	3/8	1/4	1/8	3/16	1/16

The value of V(-4X+5) is

1. 18.35
2. 20.35
3. 15.44
4. 17.55

Options :

94091830609. 1

94091830610. 2

94091830611. 3

94091830612. 4

Question Number : 20 Question Id : 9409188160 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following probability distribution:

X	0	1	2	3	4
P(x)	3/8	1/4	1/8	3/16	1/16

The value of V(4) is

1. 4
2. 0
3. 1
4. 16

Options :

94091830613. 1

94091830614. 2

94091830615. 3

94091830616. 4

Question Number : 21 Question Id : 9409188161 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A random variable X take values 1, 2, 3, 4 and 5 with respective probabilities, k, 2k, 3k, 2k and k then k = _____.

1. (1/2)
2. (1/9)
3. (1/3)
4. (1/12)

Options :

94091830617. 1

94091830618. 2

94091830619. 3

94091830620. 4

Question Number : 22 Question Id : 9409188162 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following probability density function:

$$f(x) = \begin{cases} ke^{-3x}, & x > 0 \\ 0, & otherwise \end{cases}$$

The value of k is

1. 4
2. 3
3. 5.5
4. 8

Options :

94091830621. 1

94091830622. 2

94091830623. 3

94091830624. 4

Question Number : 23 Question Id : 9409188163 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following probability density function:

$$f(x) = \begin{cases} ke^{-3x}, & x > 0 \\ 0, & otherwise \end{cases}$$

By substituting value of k in f(x), the value of P(0.5 ≤ X ≤ 1) is

1. 0.562
2. 0.173
3. 0.360
4. 0.365

Options :

94091830625. 1

94091830626. 2

94091830627. 3

94091830628. 4

Question Number : 24 Question Id : 9409188164 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following probability density function:

$$f(x) = \begin{cases} ke^{-3x}, & x > 0 \\ 0, & otherwise \end{cases}$$

By substituting value of k in f(x), the value of E(X) is

1. 1
2. 2
3. 3
4. 4

Options :

94091830629. 1

94091830630. 2

94091830631. 3

94091830632. 4

Question Number : 25 Question Id : 9409188165 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

$M_{cX}(t)$ = _____, where c being a constant.

1. $M_X(ct)$
2. $cM_X(t)$
3. $c^2 M_X(t)$
4. None of the above

Options :

94091830633. 1

94091830634. 2

94091830635. 3

94091830636. 4

Question Number : 26 Question Id : 9409188166 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If $E(X) = 1$ and $E(X^2) = 3$, then $V(X)$=____.

1. 0
2. 1
3. 3
4. 2

Options :

94091830637. 1

94091830638. 2

94091830639. 3

94091830640. 4

Question Number : 27 Question Id : 9409188167 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A random variable has discrete uniform distribution with P(x) =1/5, x=0, 1, 2, 3, 4, 5, then the value of mean is

1. 2
2. 5
3. 6
4. 3

Options :

94091830641. 1

94091830642. 2

94091830643. 3

94091830644. 4

Question Number : 28 Question Id : 9409188168 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Skewness of discrete uniform distribution is given by _____.

1. $\beta 1 = \mu_3^2 / \mu_2^3 = 0$
2. $\beta 1 = \mu_3^2 / \mu_3^2 > 0$
3. $\beta 1 = \mu_2^2 / \mu_2^3 < 0$
4. $\beta 1 = \mu_3^2 / \mu_2^3 \neq 0$

Options :

94091830645. 1

94091830646. 2

94091830647. 3

94091830648. 4

Question Number : 29 Question Id : 9409188169 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A process involving experiments consisting of trials, which in turn result into only _____, is often referred to as a Bernoulli process.

1. Two Possibilities
2. Three Possibilities
3. Four Possibilities
4. None of the above

Options :

94091830649. 1

94091830650. 2

94091830651. 3

94091830652. 4

Question Number : 30 Question Id : 9409188170 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Moment Generating Function of Bernoulli distribution is given by _____.

1. $M_x(t) = pe^t - q$
2. $M_x(t) = -pe^t + q$
3. $M_x(t) = qe^t + p$
4. $M_x(t) = pe^t + q$

Options :

94091830653. 1

94091830654. 2

94091830655. 3

94091830656. 4

Question Number : 31 Question Id : 9409188171 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X is a Bernoulli variate with p=0.7, then P(X=0) is

1. 0.7
2. 0.3
3. 0.5
4. 0

Options :

94091830657. 1

94091830658. 2

94091830659. 3

94091830660. 4

Question Number : 32 Question Id : 9409188172 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In case of binomial distribution we see that:

1. mean = variance
2. mean < variance
3. mean > variance
4. none of the above

Options :

94091830661. 1

94091830662. 2

94091830663. 3

94091830664. 4

Question Number : 33 Question Id : 9409188173 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

As N tends to infinity, the Hypergeometric distribution tends to binomial with parameter:

1. p = n/M
2. p = n-M
3. p = M + N
4. p = M/N

Options :

94091830665. 1

94091830666. 2

94091830667. 3

94091830668. 4

Question Number : 34 Question Id : 9409188174 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X ~ P(λ), then the curve for different values of λ with increase in λ shows

1. Bell shaped and flatter
2. flatter and positively skewed
3. flatter and negatively skewed
4. cannot be determined

Options :

94091830669. 1

94091830670. 2

94091830671. 3

94091830672. 4

Question Number : 35 Question Id : 9409188175 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Binomial distribution is negatively skewed if:

1. p is greater than 0.5
2. p is less than 0.5
3. p is equal to 0.5
4. none of the above

Options :

94091830673. 1

94091830674. 2

94091830675. 3

94091830676. 4

Question Number : 36 Question Id : 9409188176 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The parameters of a binomial distribution with mean 8 and variance 4 are:

1. n=2, p=1/4
2. n=16, p=1/2
3. n=232, p=1/4
4. none of the above

Options :

94091830677. 1

94091830678. 2

94091830679. 3

94091830680. 4

Question Number : 37 Question Id : 9409188177 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The incidence of occupational disease in an industry is such that the workers have a 20% chance of suffering from it. What is the probability that out of six workers chosen at random, 4 or 5 will suffer from the disease?

1. 0.0166
2. 0.0188
3. 0.0122
4. 0.0356

Options :

94091830681. 1

94091830682. 2

94091830683. 3

94091830684. 4

Question Number : 38 Question Id : 9409188178 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If Xi , (i = 1, 2, 3, . . n) are independent Poisson variates with parameters λi, (i = 1, 2, 3, . . n respectively, then $\sum_{i=1}^{n} X_i$ is

1. Binomial variate
2. Poisson variate
3. Bernoulli variate
4. None of the above

Options :

94091830685. 1

94091830686. 2

94091830687. 3

94091830688. 4

Question Number : 39 Question Id : 9409188179 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

On an average, the number of defective items in a box is 4. If there are 100 such boxes, in how many of them would you expect one defective item?

1. 5
2. 8
3. 7
4. 10

Options :

94091830689. 1

94091830690. 2

94091830691. 3

94091830692. 4

Question Number : 40 Question Id : 9409188180 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a Poisson distribution, the P(x=0) is 0.2725 then the value of parameter is

1. 1.89
2. 2.35
3. 1.30
4. 1.55

Options :

94091830693. 1

94091830694. 2

94091830695. 3

94091830696. 4

Question Number : 41 Question Id : 9409188181 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In a Poisson distribution, if P(X=1)=P(X=2), then the value of parameter is

1. 0
2. 1
3. 2
4. 3

Options :

94091830697. 1

94091830698. 2

94091830699. 3

94091830700. 4

Question Number : 42 Question Id : 9409188182 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Six unbiased coins are tossed 256 times then find the expected frequencies for number of heads obtained as 0 and 1 head.

1. 4 and 20
2. 4 and 24
3. 20 and 4
4. 20 and 24

Options :

94091830701. 1

94091830702. 2

94091830703. 3

94091830704. 4

Question Number : 43 Question Id : 9409188183 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Let the two independent random variables X1 and X2 have the same geometric distribution then the conditional distribution of X1 given X1+ X2 = n is

1. Discrete uniform.
2. Binomial distribution
3. Poisson distribution
4. Exponential distribution

Options :

94091830705. 1

94091830706. 2

94091830707. 3

94091830708. 4

Question Number : 44 Question Id : 9409188184 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Which of the following condition is not satisfied by geometric distribution?

1. An experiment consists of repeating trials until first success.
2. Each trial has two possible outcomes -a success with probability p and failure with probability q = 1-p.
3. Repeated Trials are independent.
4. Repeated Trials are dependent.

Options :

94091830709. 1

94091830710. 2

94091830711. 3

94091830712. 4

Question Number : 45 Question Id : 9409188185 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X follows Poisson distribution with parameter is 0.9. then the value of P(X=0) is

1. 0.406
2. 0.456
3. 0.615
4. 0.604

Options :

94091830713. 1

94091830714. 2

94091830715. 3

94091830716. 4

Question Number : 46 Question Id : 9409188186 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A person hits the target at probability 0.80, what is the probability that he hits the target at 3rd time?

1. 0.64
2. 0.032
3. 0.9996
4. 0.1123

Options :

94091830717. 1

94091830718. 2

94091830719. 3

94091830720. 4

Question Number : 47 Question Id : 9409188187 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The mean is _____ variance in case of Negative Binomial distribution.

1. more than
2. less than
3. equal to
4. none of the above

Options :

94091830721. 1

94091830722. 2

94091830723. 3

94091830724. 4

Question Number : 48 Question Id : 9409188188 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Trials in the negative binomial distribution has _____ possible outcomes.

1. Four
2. three
3. two
4. one

Options :

94091830725. 1

94091830726. 2

94091830727. 3

94091830728. 4

Question Number : 49 Question Id : 9409188189 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The moment generating function of negative binomial distribution is given by

1. $M_x(t) = (PQ - e^t)^{-r}$
2. $M_x(t) = (Q - Pe^t)^{-r}$
3. $M_x(t) = (Q - P)^{-r}$
4. $M_x(t) = rPQ$

Options :

94091830729. 1

94091830730. 2

94091830731. 3

94091830732. 4

Question Number : 50 Question Id : 9409188190 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A market research agency that conducts interviews by telephone has found from past experience that there is a 0.40 probability that a call made between 2.30 to 5.30pm will be answered. Assuming a Bernoulli process: what is the probability that an interviewer's 10^{th} answer comes on his 20^{th} call.

1. 0.450
2. 0.058
3. 0.989
4. 0.235

Options :

94091830733. 1

94091830734. 2

94091830735. 3

94091830736. 4

Question Number : 51 Question Id : 9409188191 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If P (A) =1/4 and P (B) =1/3 and A and B are independent. Then, P (A∩B) = _____.

1. 1/8
2. 1/6
3. 1/4
4. 1/12

Options :

94091830737. 1

94091830738. 2

94091830739. 3

94091830740. 4

Question Number : 52 Question Id : 9409188192 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In an experiment of tossing of a coin, X is the variable which denotes Head. If Tails appears, what would be the value of X?

1. 1
2. 1/4
3. 0
4. 2/4

Options :

94091830741. 1

94091830742. 2

94091830743. 3

94091830744. 4

Question Number : 53 Question Id : 9409188193 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

What is the probability of exact values in continuous random variable (That is P(X=x))?

1. 1
2. 2
3. 0.5
4. 0

Options :

94091830745. 1

94091830746. 2

94091830747. 3

94091830748. 4

Question Number : 54 Question Id : 9409188194 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If A and B are mutually exclusive events and P(A)=2/5 and P(B)=3/5, then P(AUB)= _____ .

1. 2/3
2. 3/2
3. 1
4. 1/2

Options :

94091830749. 1

94091830750. 2

94091830751. 3

94091830752. 4

Question Number : 55 Question Id : 9409188195 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The one whose occurrence or non – occurrence of one does not depend on the occurrence or non – occurrence of the other is _____ event.

1. an independent
2. a complementary
3. an equally likely
4. a mutually exclusive and exhaustive

Options :

94091830753. 1

94091830754. 2

94091830755. 3

94091830756. 4

Question Number : 56 Question Id : 9409188196 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If P(A) = 0.3, P(B) = 0.2 and P(A∩B) = 0.1, then P(A/B) is equal to_____.

1. 0.5
2. 0.75
3. 0.25
4. 0

Options :

94091830757. 1

94091830758. 2

94091830759. 3

94091830760. 4

Question Number : 57 Question Id : 9409188197 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The _____ distribution is an example of a distribution which has no mean, variance or higher moments defined.

1. Gamma
2. Laplacian
3. Normal
4. Cauchy

Options :

94091830761. 1

94091830762. 2

94091830763. 3

94091830764. 4

Question Number : 58 Question Id : 9409188198 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X follows normal distribution, then $P(\mu - 2\sigma < X < \mu + 2\sigma)$ is

1. 0.9544
2. 0.9000
3. 0.5000
4. 0.9973

Options :

94091830765. 1

94091830766. 2

94091830767. 3

94091830768. 4

Question Number : 59 Question Id : 9409188199 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X is uniform over, (-3, 3) then mean of the distribution is

1. 1/2
2. 0
3. 1/6
4. 2/5

Options :

94091830769. 1

94091830770. 2

94091830771. 3

94091830772. 4

Question Number : 60 Question Id : 9409188200 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X is uniformly distributed with mean=1 and variance 4/3. Then the value of the parameters a and b are

1. 3 and 5
2. 2 and 4
3. 4 and 16
4. 8 and 64

Options :

94091830773. 1

94091830774. 2

94091830775. 3

94091830776. 4

Question Number : 61 Question Id : 9409188201 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X is uniformly distributed with mean=1 and variance 4/3. Then the value of P(x>0) is

1. 1/2
2. 1/4
3. 1/6
4. 1/8

Options :

94091830777. 1

94091830778. 2

94091830779. 3

94091830780. 4

Question Number : 62 Question Id : 9409188202 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In beta distribution of first kind, if parameters m and n are equal to 1, then the resulting distribution is

1. beta of 2nd kind
2. uniform distribution
3. normal distribution
4. Cauchy distribution

Options :

94091830781. 1

94091830782. 2

94091830783. 3

94091830784. 4

Question Number : 63 Question Id : 9409188203 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The sum of independent gamma variates is

1. gamma variate
2. beta variate
3. normal variate
4. Poisson variate

Options :

94091830785. 1

94091830786. 2

94091830787. 3

94091830788. 4

Question Number : 64 Question Id : 9409188204 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Gamma distribution is transformed to beta distribution of first kind by the transformation _____ .

1. x/x+y
2. 1+x/1+y
3. x/x-y
4. x/1+y

Options :

94091830789. 1

94091830790. 2

94091830791. 3

94091830792. 4

Question Number : 65 Question Id : 9409188205 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The full form of exponential distribution is given by_____

1. $f(x) = \theta e^{-x\theta}, x > 1$
2. $f(x) = \theta e^{-x\theta}, x > 0$
3. $f(x) = \theta e^{x\theta}, x > 0$
4. $f(x) = \theta e^{-x\theta}, x > -1$

Options :

94091830793. 1

94091830794. 2

94091830795. 3

94091830796. 4

Question Number : 66 Question Id : 9409188206 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

In gamma distribution, when _____ , the curve is similar to that of the exponential curve.

1. K=0
2. K=1
3. K=2
4. K=-1

Options :

94091830797. 1

94091830798. 2

94091830799. 3

94091830800. 4

Question Number : 67 Question Id : 9409188207 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The curve of Laplace distribution is symmetric about _____ .

1. β
2. α
3. μ
4. None of the above

Options :

94091830801. 1

94091830802. 2

94091830803. 3

94091830804. 4

Question Number : 68 Question Id : 9409188208 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Poisson distribution tends to normal distribution when the parameter is _____ .

1. $\lambda \rightarrow 0$
2. $\lambda \rightarrow 1$
3. $\lambda \rightarrow -1$
4. $\lambda \rightarrow \infty$

Options :

94091830805. 1

94091830806. 2

94091830807. 3

94091830808. 4

Question Number : 69 Question Id : 9409188209 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The moment generating function of normal variate is given by _____ .

1. $M_x(t) = e^{\mu t + \left(\frac{t^2\sigma^2}{2}\right)}$
2. $M_x(t) = e^{t + \left(\frac{t^2\sigma^2}{2}\right)}$
3. $M_x(t) = e^{\mu t + \left(\frac{t\sigma}{2}\right)}$
4. $M_x(t) = e^{\mu + (t\sigma)}$

Options :

94091830809. 1

94091830810. 2

94091830811. 3

94091830812. 4

Question Number : 70 Question Id : 9409188210 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The points of inflexion of the normal curve is given by _____ .

1. $\mu \pm \sigma$
2. $\sigma \pm \mu$
3. $\sigma \pm \beta$
4. $\mu \pm \beta$

Options :

94091830813. 1

94091830814. 2

94091830815. 3

94091830816. 4

Question Number : 71 Question Id : 9409188211 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The mean I.Q. of a large number of children of age 14 is 95 and the standard deviation is 6. Assuming the distribution as normal, then the proportion of the children has I.Q. above 90 is

1. 0.5232
2. 0.8698
3. 0.7967
4. 0.4123

Options :

94091830817. 1

94091830818. 2

94091830819. 3

94091830820. 4

Question Number : 72 Question Id : 9409188212 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Marks scored by the students of a class follows normal distribution with mean 80 and S.D. 5. Find the probability that a student selected at random from the class scored Between 70 and 85 marks is

1. 0.4523
2. 0.8185
3. 0.3256
4. 1

Options :

94091830821. 1

94091830822. 2

94091830823. 3

94091830824. 4

Question Number : 73 Question Id : 9409188213 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Marks scored by the students of a class follows normal distribution with mean 80 and S.D. 5. Find the probability that a student selected at random from the class scored Less than 75 marks is

1. 0.032
2. 0.231
3. 0.158
4. 0.256

Options :

94091830825. 1

94091830826. 2

94091830827. 3

94091830828. 4

Question Number : 74 Question Id : 9409188214 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Marks scored by the students of a class follows normal distribution with mean 80 and S.D. 5.
Find the probability that a student selected at random from the class scored more than 90 is

1. 20
2. 24
3. 53
4. 23

Options :

94091830829. 1

94091830830. 2

94091830831. 3

94091830832. 4

Question Number : 75 Question Id : 9409188215 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

A random variable X is said to have a Standard Cauchy Distribution, if its pdf is given by

1. $f(x) = \frac{1}{\pi(1-x^2)}, -\infty < x < \infty$
2. $f(x) = \frac{1}{\pi(1+x)}, -\infty < x < \infty$
3. $f(x) = \frac{1}{\pi(1+x^2)}, -\infty < x < \infty$
4. $f(x) = \frac{1}{(1-x^2)}, -\infty < x < \infty$

Options :

94091830833. 1

94091830834. 2

94091830835. 3

94091830836. 4

Question Number : 76 Question Id : 9409188216 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X follows normal distribution with mean 30 and S.D. 6, then the value of quartile deviation is

1. 3
2. 5
3. 4
4. 8

Options :

94091830837. 1

94091830838. 2

94091830839. 3

94091830840. 4

Question Number : 77 Question Id : 9409188217 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Mode of the Cauchy distribution is

1. $x=\mu$
2. $x=0$
3. mode does not exist
4. none of the above

Options :

94091830841. 1

94091830842. 2

94091830843. 3

94091830844. 4

Question Number : 78 Question Id : 9409188218 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The mean of the logistic Variable (X) with parameters α and β is

1. β
2. 0
3. α
4. αβ

Options :

94091830845. 1

94091830846. 2

94091830847. 3

94091830848. 4

Question Number : 79 Question Id : 9409188219 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Median of Pareto distribution is given as _____ .

1. √ab
2. 2√ab
3. $a\sqrt[b]{2}$
4. $b\sqrt[a]{2}$

Options :

94091830849. 1

94091830850. 2

94091830851. 3

94091830852. 4

Question Number : 80 Question Id : 9409188220 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Let X have a exponential distribution with mean =20. Then P(10 < x < 30) is

1. 0.2323
2. 0.5465
3. 0.3834
4. 0.5232

Options :

94091830853. 1

94091830854. 2

94091830855. 3

94091830856. 4

Question Number : 81 Question Id : 9409188221 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The following table gives the distribution of life 'X' in hours of 400 electric tubes of a certain company. Assume the distribution is exponential.

Life(in hours)	0-50	50-100	100-150	150-200	200-300	300-400	400-600
Frequency	100	88	58	31	41	41	41

Then the value of the parameter is

1. 160
2. 152
3. 145
4. 168

Options :

94091830857. 1

94091830858. 2

94091830859. 3

94091830860. 4

Question Number : 82 Question Id : 9409188222 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

The following table gives the distribution of life 'X' in hours of 400 electric tubes of a certain company. Assume the distribution is exponential.

Life(in hours)	0-50	50-100	100-150	150-200	200-300	300-400	400-600
Frequency	100	88	58	31	41	41	41

The expected frequency of P(50 < x < 100) is

1. 0.1235
2. 0.1939
3. 0.2565
4. 0.4565

Options :

94091830861. 1

94091830862. 2

94091830863. 3

94091830864. 4

Question Number : 83 Question Id : 9409188223 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Bivariate moment of discrete variable is given as _____ .

1. $E(g(X,Y) = \sum\sum x_i y_j P(X = x_i \cap Y = y_j)$
2. $E(g(X,Y) = \sum\sum P(X = x_i \cap Y = y_j)$
3. $E(g(X,Y) = \sum\sum x_i y_j P(X = x_i \cup Y = y_j)$
4. $E(g(X,Y) = \sum\sum x_i y_j P(X = x_i)$

Options :

94091830865. 1

94091830866. 2

94091830867. 3

94091830868. 4

Question Number : 84 Question Id : 9409188224 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following bivariate table:

X Y▶ ▼	0	10	20
1	0	0.1	0.1
2	0.1	0.2	0.1
3	0.2	0.1	0.1

The value of E(X) is

1. 5.0
2. 2.2
3. 3.2
4. 4.2

Options :

94091830869. 1

94091830870. 2

94091830871. 3

94091830872. 4

Question Number : 85 Question Id : 9409188225 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following bivariate table:

X Y▸	0	10	20
1	0	0.1	0.1
2	0.1	0.2	0.1
3	0.2	0.1	0.1

The value of P(X=3,Y=10) is

1. 0.2
2. 0
3. 0.5
4. 0.1

Options :

94091830873. 1

94091830874. 2

94091830875. 3

94091830876. 4

Question Number : 86 Question Id : 9409188226 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following bivariate table:

X Y▸	0	10	20
1	0	0.1	0.1
2	0.1	0.2	0.1
3	0.2	0.1	0.1

The conditional probability of X given Y=10 is

1. 0.3
2. 0.2
3. 0.4
4. 0

Options :

94091830877. 1

94091830878. 2

94091830879. 3

94091830880. 4

Question Number : 87 Question Id : 9409188227 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following bivariate probability density function:

$$f(x,y) = \begin{cases} cxy, & for\ 0 < x < 4, 1 < y < 5 \\ 0, & otherwise \end{cases}$$

The value of c for the given joint p.d.f. is

1. 1/84
2. 2/15
3. 1/96
4. 1/78

Options :

94091830881. 1

94091830882. 2

94091830883. 3

94091830884. 4

Question Number : 88 Question Id : 9409188228 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following bivariate probability density function:

$$f(x,y) = \begin{cases} cxy, & for\ 0 < x < 4, 1 < y < 5 \\ 0, & otherwise \end{cases}$$

The value of P(1 < x < 2, 2 < y < 3) by substituting c value is

1. 0.2032
2. 0.0390
3. 0.512
4. 0.002

Options :

94091830885. 1

94091830886. 2

94091830887. 3

94091830888. 4

Question Number : 89 Question Id : 9409188229 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Given the following bivariate probability density function:

$$f(x,y) = \begin{cases} cxy, & for\ 0 < x < 4, 1 < y < 5 \\ 0, & otherwise \end{cases}$$

By substituting the value of c, the marginal density of X is

1. x/8
2. y/2
3. x/2
4. xy/8

Options :

94091830889. 1

94091830890. 2

94091830891. 3

94091830892. 4

Question Number : 90 Question Id : 9409188230 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Conditional variance of continuous bivariate random variable of X given Y is defined as

1. $V(X|Y=y)=E[\{X-E(X|Y=y)\}^2 |Y=y]$
2. $V(X|Y=y)=(X|Y=y)^2 |Y=y]$
3. $V(Y|X=x)=E[\{Y-E(Y|X=x)\}^2 |X=x]$
4. None of the above

Options :

94091830893. 1

94091830894. 2

94091830895. 3

94091830896. 4

Question Number : 91 Question Id : 9409188231 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Two random variables X and Y have the following joint probability density function:

$$f(x,y) = \begin{cases} 2-x-y, & for\ 0 \le x \le 1, 0 \le y \le 1 \\ 0, & otherwise \end{cases}$$

Then covariance of X and y is

1. 1/122
2. -1/144
3. -1/2
4. 0

Options :

94091830897. 1

94091830898. 2

94091830899. 3

94091830900. 4

Question Number : 92 Question Id : 9409188232 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Two random variables X and Y have the following joint probability density function:

$$f(x,y) = \begin{cases} 2-x-y, & for\ 0 \le x \le 1, 0 \le y \le 1 \\ 0, & otherwise \end{cases}$$

The value of $E(X^2)$ is

1. 1/2
2. 1/5
3. 1/25
4. 1/4

Options :

94091830901. 1

94091830902. 2

94091830903. 3

94091830904. 4

Question Number : 93 Question Id : 9409188233 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Two random variables X and Y have the following joint probability density function:

$$f(x,y) = \begin{cases} 2-x-y, & for\ 0 \le x \le 1, 0 \le y \le 1 \\ 0, & otherwise \end{cases}$$

The conditional mean of X given Y=0.5 is

1. 0.4167
2. 0.4565
3. 0.4000
4. 0.8456

Options :

94091830905. 1

94091830906. 2

94091830907. 3

94091830908. 4

Question Number : 94 Question Id : 9409188234 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Let (X, Y) follows Bivariate normal distribution with $\mu_1=100$,$\mu_2=80$, $\sigma_1^2=4$, $\sigma_2^2=2$ and $\rho=0.4$ then the conditional variance of X given Y is

1. 5.23
2. 2.56
3. 3.36
4. 4.58

Options :

94091830909. 1

94091830910. 2

94091830911. 3

94091830912. 4

Question Number : 95 Question Id : 9409188235 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Let (X, Y) follows Standard Bivariate normal distribution with correlation coefficient is 0.45 then the conditional mean of Y given X=5 is

1. 8.5
2. 5.6
3. 1.23
4. 2.25

Options :

94091830913. 1

94091830914. 2

94091830915. 3

94091830916. 4

Question Number : 96 Question Id : 9409188236 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If (X, Y) follows Bivariate normal distribution with parameters μ_1, μ_2, σ_1^2, σ_2^2, and ρ, then the marginal distribution of X is density function of

1. Exponential distribution
2. Normal distribution
3. Pareto distribution
4. None of the above

Options :

94091830917. 1

94091830918. 2

94091830919. 3

94091830920. 4

Question Number : 97 Question Id : 9409188237 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If X and Y are standard normal variates with correlation coefficient ρ between them, then the correlation coefficient between X^2 and Y^2 is given by

1. ρ
2. 0
3. $1-\rho$
4. ρ^2

Options :

94091830921. 1

94091830922. 2

94091830923. 3

94091830924. 4

Question Number : 98 Question Id : 9409188238 Question Type : MCQ Option Shuffling : No Is

Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Simulate a random sample from standard normal distribution using the given random number:
0.9462 is

1. 1.5
2. 1.61
3. 2.35
4. 3.33

Options :

94091830925. 1

94091830926. 2

94091830927. 3

94091830928. 4

Question Number : 99 Question Id : 9409188239 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

If the moment generating function of normal distribution is $M_x(t) = \exp(-6t+32t^2)$ then the value of the parameters are

1. -6 and 32
2. -6 and 10
3. -6 and 64
4. -6 and -6

Options :

94091830929. 1

94091830930. 2

94091830931. 3

94091830932. 4

Question Number : 100 Question Id : 9409188240 Question Type : MCQ Option Shuffling : No Is Question Mandatory : No

Correct Marks : 1 Wrong Marks : 0

Simulate a random sample from exponential distribution with parameter 10 using the given random number: 0.5915 is

1. 5.32
2. 17.5
3. 8.95
4. 10

Options :

94091830933. 1

94091830934. 2

94091830935. 3

94091830936. 4