chapter-16

Probability Distribution

Find the probabilit				
	y that at least 5 defective	bolts will be found in a	box of 200 bolts. If it is kn	own that
2% of such bolts a	re expected to be defective	ve (Given: e ⁻⁴ = 0.0183)		
(a) 0.4717	(b) 0.3717	(c) 0.3017		1 (
If the two quartile about median of t	s of a normal distribution this distribution.	are 47.30 and 52.70 re		deviation
(a) 3.80	(b) 3.40	(c) 3.20	(d) 4.20	
		MTP March, '20		
X follows normal of	distribution with mean as	50 and variance as 100	. What is	
	(b) 0.40	(c) 0.16	(d) 0.30	
	nts per page of a thick bo	ook follows		
		(b) Poiss		
	stribution	(d) Stand	lard normal distribution	
If for a Poisson va	riable X , $f(2) = 3 f(4)$, wha	at is the variance of X?		
(a) 2	(b) 4	(c) $\sqrt{2}$	(d) 3	
	flexion of a normal curve	are 40 and 60 respecti	vely, then its mean deviati	ion is
in the points			[MTP April '19, I	
(a) 8	(b) 10	(c) 12	(d) 15	
	MTF	October, '19		
If x & y are two ir	ndependent variables suc	h that $x^B(n_1,P)$ and y	$\sim B(n_2,P)$ then the parameter	eter of Z
x+y is				
(a) (n_1+n_2) , P				
(c) (n +n) 2P				
Five coins tossed	3200 times. The number	of times 5 heads appe	ared is	
(a) 500	(b) 1200	(c) 200	(d) 100	
For the normal di	stribution density function	on $f(x) = k.e \frac{(x^2 - 6x + 9)}{8}$, the mean and variance a	are
(a) (2,3)	(b) (3,2)	(c) (4,3)	(d) (3,4)	
	2% of such bolts a (a) 0.4717 If the two quartile about median of the content	2% of such bolts are expected to be defective. (a) 0.4717 (b) 0.3717 If the two quartiles of a normal distribution about median of this distribution. (a) 3.80 (b) 3.40 X follows normal distribution with mean as $P(x \ge 60)$? [Given $\phi(1) = 0.8413$] (a) 0.20 (b) 0.40 Number of misprints per page of a thick begin in the points of inflexion of a normal curve of inflexion of a	2% of such bolts are expected to be defective (Given: $e^{-4} = 0.0183$) (a) 0.4717 (b) 0.3717 (c) 0.3017 If the two quartiles of a normal distribution are 47.30 and 52.70 re about median of this distribution. (a) 3.80 (b) 3.40 (c) 3.20 MTP March, '20 X follows normal distribution with mean as 50 and variance as 100 P(x ≥ 60)? [Given $\phi(1) = 0.8413$] (a) 0.20 (b) 0.40 (c) 0.16 Number of misprints per page of a thick book follows (a) Normal distribution (b) Poiss (c) Binomial distribution (d) Stand If for a Poisson variable X, $f(2) = 3 f(4)$, what is the variance of X? (a) 2 (b) 4 (c) $\sqrt{2}$ If the points of inflexion of a normal curve are 40 and 60 respectively. (a) 8 (b) 10 (c) 12 MTP October, '19 If x & y are two independent variables such that $x \sim B(n_1, P)$ and y x+y is (a) (n_1+n_2) , P (d) None of (c) (n_1+n_2) , P (d) None of (a) 500 (b) 1200 (c) 200 For the normal distribution density function $f(x) = k.e. \frac{(x^2 - 6x + 9)}{8}$	2% of such bolts are expected to be defective (Given: $e^{-a} = 0.0183$) (a) 0.4717 (b) 0.3717 (c) 0.3017 (d) None of these if the two quartiles of a normal distribution are 47.30 and 52.70 respectively, find the mean about median of this distribution. (a) 3.80 (b) 3.40 (c) 3.20 (d) 4.20 MTP March, 20 X follows normal distribution with mean as 50 and variance as 100. What is $P(x \ge 60)$? [Given $\varphi(1) = 0.8413$] (a) 0.20 (b) 0.40 (c) 0.16 (d) 0.30 Number of misprints per page of a thick book follows (a) Normal distribution (b) Poisson distribution (c) Binomial distribution (d) Standard normal distribution if for a Poisson variable X, $f(2) = 3 f(4)$, what is the variance of X? (a) 2 (b) 4 (c) $\sqrt{2}$ (d) 3 If the points of inflexion of a normal curve are 40 and 60 respectively, then its mean deviate [MTP April '19, (a) 8 (b) 10 (c) 12 (d) 15 MTP October, '19 If $x \& y$ are two independent variables such that $x \sim B(n_1, P)$ and $y \sim B(n_2, P)$ then the param $x + y$ is (a) $(n_1 + n_2)$, P (b) $(n_1 - n_2)$, P (c) $(n_1 + n_2)$, P (d) None of these Five coins tossed 3200 times. The number of times 5 heads appeared is (a) 500 (b) 1200 (c) 200 (d) 100 For the normal distribution density function $f(x) = k \cdot e^{\frac{(x^2 - 6x + 9)}{8}}$, the mean and variance $\frac{(x^2 - 6x + 9)}{8}$, the mean and variance $\frac{(x^2 - 6x + 9)}{8}$, the mean and variance $\frac{(x^2 - 6x + 9)}{8}$, the mean and variance $\frac{(x^2 - 6x + 9)}{8}$, the mean and variance $\frac{(x^2 - 6x + 9)}{8}$.

(a) Binomial (d) Hyper geome The mean deviation (a) 0.675 σ What is the first quantum of the control of the c	n about median of a stand (b) 0.675 Partile of X having the following t	(c) dard norr (c) owing pro (c) ITP March (c) distribute mean o	0.80 σ bability d 5.95 1, '19 0.50. (b) 969 (d) all b is its qual 15.00 ion f the free	e is ensity fund area of a ut 0.27% a rtile devia (continuous dis	a normal of a rea of a retion?	[MTP Oct. '20]
Which one is unipout (a) Binomial (d) Hyper geome The mean deviation (a) 0.675 ♂ What is the first quarter (a) 4 The total area of the (a) one.	e normal curve is (b) 5 e rametric distribution? (b) Poisson (b) 0.675 (b) 5	(c) dard norr (c) owing pro (c)	Normal nal variate 0.80 σ bability d 5.95	e is (ensity fund	d) 0.80 ction? f(x	
Which one is unip (a) Binomial (d) Hyper geome The mean deviation (a) 0.675 σ What is the first quip - ∞ < x ∞ < (a) 4	arametric distribution? (b) Poisson etric n about median of a stand (b) 0.675 eartile of X having the following th	(c) dard norr (c) owing pro	Normal nal variate 0.80 σ bability d	e is (ensity fund	d) 0.80 ction? f(x	$= \frac{1}{\sqrt{72\pi}} e^{\frac{-(x-10)^2}{72}} \text{ fo}$
Which one is uniposed (a) Binomial (d) Hyper geometric The mean deviation (a) 0.675σ What is the first quantum of the mean deviation (a) 0.675σ	arametric distribution? (b) Poisson etric n about median of a stand (b) 0.675 eartile of X having the follow	(c) dard norr (c) owing pro	Normal nal variate 0.80 σ bability d	e is (ensity fund	d) 0.80 ction? f(x	$) = \frac{1}{\sqrt{72\pi}} e^{\frac{-(x-10)^2}{72}} \text{ fo}$
Which one is uniportal (a) Binomial (d) Hyper geome The mean deviation (a) 0.675 σ	arametric distribution? (b) Poisson etric n about median of a stand (b) 0.675	(c) dard norr (c)	Normal nal variate 0.80 σ	e is	d) 0.80	$) = \frac{1}{\sqrt{72\pi}} e^{\frac{-(x-10)^2}{72}} \text{ fo}$
Which one is unip (a) Binomial (d) Hyper geome The mean deviation	arametric distribution? (b) Poisson tric n about median of a stand	(c) dard norr	Normal	e is		
Which one is unip (a) Binomial (d) Hyper geome	arametric distribution? (b) Poisson tric	(c)	Normal		(a) 211	
Which one is unip	arametric distribution?			0) ((a) 211	
		(c)	np(1-p)	o) ((a) 211	
					(4) 25	
(c) never negation	vely skewed he of the variance of a bin	omial dis				
A binomial distrib	etrical		(b) ne	ever positi mmetrical	ively skev	ved : 0 .5
A himannial distrib		MTP Apr	1, '19			
(a) (27, 15)	(b) (10, 27)	(c)	(25,13)		(d) (12,2	5)
If x and y are two i	ndependent normal rando	om distrib	utions wi	th mean ar	na 30 3 an	
/a) 3	(b) 4/3	(c)	√18π 2	10	(d) ³ / ₄	(10 5) and (15 15
(a) 40/3	ation of the normal distrib	oution f(x	= 1	$e^{-(x-10)^2}$	2 -, -∞ <x< td=""><td><∞</td></x<>	<∞
The mean deviation	(b) 20/3	(c)	100/3		(d) 50/3	
	(a) 40/3 The Quartile Devia (a) 3 If x and y are two i these mean and SI	(a) 40/3 The Quartile Deviation of the normal distribution (a) 3 If x and y are two independent normal rando these mean and SD of (x+y) is	(a) 40/3 The Quartile Deviation of the normal distribution f(x) (a) 3 (b) 4/3 (c) If x and y are two independent normal random distribution these mean and SD of (x+y) is	(a) $40/3$ (b) $20/3$ The Quartile Deviation of the normal distribution $f(x) = \frac{1}{\sqrt{18\pi}}$ (a) 3 (b) $4/3$ (c) 2 If x and y are two independent normal random distributions withese mean and SD of (x+y) is	The Quartile Deviation of the normal distribution $f(x) = \frac{1}{\sqrt{18\pi}}e^{-(x-10)^2}$ (a) 3 (b) 4/3 (c) 2 If x and y are two independent normal random distributions with mean at these mean and SD of (x+y) is	The Quartile Deviation of the normal distribution $f(x) = \frac{1}{\sqrt{18\pi}} e^{-\frac{(x-10)^2}{18}}$, $-\infty < X$ (a) 3 (b) 4/3 (c) 2 (d) $\frac{3}{4}$ If x and y are two independent normal random distributions with mean and SD's are these mean and SD of (x+y) is

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12.	The Binomial Distribution	for which mean = 15	and variance = 6.0 is		
	(a) $25C_x (3/5)^x (2/5)^{25-x}$	(b) 25C _x (2/5) ^x			
	(c) $25C_x(2/5)^x(3/5)^{1-x}$	(d) 25C _x (3/5) ^x			
23.	The SD of a binomial dist				
	(a) n (1-p)	(b) np (1 – p)	(c) np	(d) $\sqrt{np(1-p)}$).
24.	If $P(X=2) = P(X=3)$ for a P	oisson Variate X, then	E(x) is		
	(a) 2	(b) 3	(c) 1	(d) none	
25.	The mean and mode of	the normal distributio	n	.a. (d) (a) or (b)	
	(a) may be equal		nt (c) are always equ	iai (u) (u) o. (=)	
		<u>M</u>	TP March '21		
26.	In normal distribution w (a) 12:10:15	hat is the ratio of QD: (b) 15:10:12	MD:SD (c) 10:15;12	(d) 10:12:15	
27.	Area covered normal cu	rve by $\mu \pm 3\sigma$			
		(h) 05 06%	(c) 99.73%	(d) 99.23%	ictribution
28.	(a) 68.28% If x is binomial variate v	with parameter 15 and	1 1/3 what is the value	of mode of the u	Stribution.
	(2) 586	(b) 5.5	(c) 5	(d) 6	
29.	In Poisson distribution	which of the following	g is same.		
	(a) Mean and variance	ce. (b) Mean a	na su		
	(c) Both The Quartile Deviation	(d) None o	n with mean is 10 and v	variance is 16 is	
30.					
	(a) 54.24 What is the standard	doviation of number	recoveries among 48	patients when t	he probability
31.	What is the standard recovering is 0.75?	deviation o			
		(b) 81	(c) 9	(d) 3	
			MTP-March'22		
	The mode of the binor	mial distribution for w	hich the mean is 4 vara	aince 3 is equal to	o ?
32.	The mode of the binds (a) 4	(b) 4.5	(c) 4.25	(d) 4.1
33,	For Poisson Distribution (a) Mean and Stand	ard Deviation are are	al (b) Mean and equal (d) Both (a) a ne distribution will be _ (b) Poi	Vraince are equal	al
34	 If a varaiate x has , m (a) Binomial Distribution (c) Normal Distribution 	oution		sson Distributior istribution	

of

35.	An example of a bi-p	arametr	ic continuous	probability dis	stribution	(d)	Chi-square
		(h)	Poisson	(C)	MOIIIIGI		
36.	(a) Binomial For a poisson variate	X, P(x=2)	= 3 P(x=4), t	hen the standa	ra deviación -	(d)	3
	(a) 2	(b)			$\sqrt{2}$		
37.	What is the mean of	X having	the following	g density funct	ion ?		
	(v. 10) ²			•			
	$f(x) = \frac{1}{\sqrt[4]{2} \Pi} e^{-\frac{(x-10)^2}{32}}$	for -∞	< x < ∞				
	V-11			(c)	40	(d)	none of these
	(a) 10	(b)			40		
			Alexandra .	TP-Oct'21			
38.	What is the first quart	tile of X	having the fo	ollowing proba	bility density fur	nction?	
	1 (4 10)	2					
	$f(x) = \frac{1}{\sqrt{72\pi}} e^{-(x-10)}$	for -	∞ < x < ∞				,
	V/21C /2					4.0	
	(a) 4	(b)	5	(c)	5.95	(d)	6.75
	*						
39.	If X follows normal dist	tribution	with $\mu = 50$	and $\sigma = 10$, v	what is the value	of	
	$P(x \le 60 / x > 50)$?						
	(a) 0.8413	(b)	0.6826	(c)	0.1587	(d)	0.7256
	Φ (1) = 0.8413						
40.	For a normal distribution	n with r	nean as 500 a	nd SD as 120 w	that is the value	of k and k	
	k] covers 40.32 per cen	t area o	f the normal	curve? [Given o	Φ (1.30) = 0.903	ork so that 1 2 1	the interval [500
	(a) 740	(b)	750	(c)	656		
41.	If the mean deviation of					(d)	800
	(a) 10.00.	(b)	13.50.			tion?	
42.				(c)	15.00.	(d)	12.05.
	For a Poisson variate X, (a) 1.00.			what is the me	an of X?		
	12,00.	(b)	1.50.	(c)	2.00.	(d)	2.50.
43.	The variance of the						(0,000,000,000,000,000,000,000,000,000,
	The variance of a binon	nial dist	ribution with	parameters n	and p is		
	(a) $np^2(1-p)$	(b)	$\sqrt{np(1-p)}$	(c)	n= /1		
			V-F(- P)	(0)	nq (1 – q)	(d) n	$(1-p)^2$
14.	Number of J.		MT	P-Nov'21			
	Number of defects in cl. (a) Poisson distribution	othes a	garments she	owroom will fo	orm a		
	(a) Poisson distribution(c) Binomial distribut	on		(b)		ribution	
	uisui put	ion		(d)	Cannot be o	letermined	
4 64						med	

Chapter-16: Probability

	probability distribution may be	2		
	(a) Discrete (b)	Continuous	(c) Infinite	(d) (a) or (b)
6	In a certain Poisson frequency	distant		and success is half the
	, , , , , , ()	ree successes. The m	nean of the distribution i	S
	(0)	12	(c) 3	(d) 2.45
1.	The normal curve is			
	(a) Positively skewed		(b) Negatively sk	ewed
	(c) Symmetrical	Transfer to the company	(d) All these	
	An example of a bi-parametric	c discrete Probability	distribution is	
	(a) Binomial distribution		(b) Poisson Distr	
	(c) Normal Distribution		(d) Both (a) and (
).	For a normal distribution Q1 =			(d) None
	(a) 12.17 (b)	39.43	(c) 66.59	(a) None
		MTP-2 Nov	<u>′22</u>	
).	What is the mean of X having	the following density	y function?	
	(x-10) ²			
	$f(x) = \frac{1}{\sqrt[4]{2\pi}} e^{\frac{(x-10)^2}{32}} \text{ for } -\infty < x < \infty$	∞ ∞		
	(a) 4	(b) 10	(c) 40	(d) None of these
1	If mean and variance are 5 ar	nd 3 respectively then	relation between p and	q is:
	(-) ->	p > q (d)	(c) $p = q$	(d) p is symmetric
	(a) p > q In a Poisson distribution if P(x	(x=4) = P(x=5) then th	e parameter of Poisson	distribution is:
2.		(b) 5/4	(c) 4	(d) 5
	(a) 4/5 Area between -1.96 to +1.96	in a normal distribution	on is:	finish on to more than a
3.		(b) 95%	(c) 96%	(d) 99%
	(a) 95.45%	MTP-1 No	v'22	
		WITT-1160	the fires 7 times the pro	hability of hitting the target
4.	The probability of a man hitti	ng the target is 1/4. If	ne mes 7 dines, die pro	bability of fitting the target
	· · · · · · · · · · · · · · · · · · ·			
	(a) $1 - \left(\frac{5}{2}\right) \left(\frac{3}{4}\right)^6$	$15(3)^6$	5 25	(4) 1 $\left(\frac{3}{3}\right)^6$
	$(2) 1 - (\frac{5}{2})(\frac{3}{2})$	(b) $1 - \frac{1}{2} \left(\frac{1}{4} \right)$	(c) 1 - 6,3	(d) 1- (4)
	If 5% of the electric bulbs m	and by a con	nnany are defective, use	Poisson distribution to find
55.	If 5% of the electric bulbs m the probability that in a sam	anufactured by a con	ilbs will be defective. [Gi	ven : e-5 = 0.007]
	the probability that in a sain	- 1722	(c) 0.1623	(d) 0.1923
	(a) 0.1823	(b) 0.1723	standard deviation of a	binomial distribution are 10
56.	(a) 0.1823 Examine the validity of the f	following : Wearr and		
	and 4 respective:		(b) Valid	
	(a) Not valid		(d) Neither [a] no	r [b]
	(c) Both [a] and [b]			

	a to an variate Y Pl	x=1) =P($x=2$), what is the m	ean of x?	(d) 5/2
57.	(a) 1	(b) 3/2	(c) 2	7 and 49, the mode of the (d) 45
58.	For a normal distribution distribution is. (a) 37.	(b) 49	(c) 43	(d) 45
		MTP-2 June'2	$\frac{12}{12}$ (Given e^{-1}	0.36783)
9.	If x be a poison variates w	ith parameter 1; then find I	p(3 <x<3). (01vc<="" th=""><th>(d) None of these</th></x<3).>	(d) None of these
	(a) 0.015326	(b) 0.15326	(c) 0.012326	lity that out of five students
60.	The probability that a stu four are swimmers is:	dent is not a swimmer is 1,	/5, then the probabl	lity that out of five students
	(a) $\left(\frac{4}{5}\right)^4 \left(\frac{1}{5}\right)$	(b) ${}^{5}C_{1}\left(\frac{1}{5}\right)^{4}\left(\frac{4}{5}\right)$	(c) ${}^{5}C_{4}\left(\frac{4}{5}\right)^{4}\left(\frac{1}{5}\right)$	
	(d) None of these			10.8965.03.243
1.	In a Binomial distribution	n = 9 and P = 1/3. What is the	he value of Variance.	
	(a) 8	(b) 4	(c) 2	(d) 16
2.	The variance of standard	normal distribution is		
	(a) 1	(b) 0	(c) σ2	(d) 0
3.	In a Poisson Distribution	P(x=0) = P(x=2). Find $E(x)$		
	(a) √2	(b) 2	(c) -1	(d) 0
4.	Name of the distribution	which has Mean= Variance		
	(a) Binomial	(b) Poisson	(c) Normal	(d) (a) and (b)
		ANSWER KE	<u>YS</u>	
	1 (b)	2 (c)	3 (c)	4 (b)
	5 (a)	6 (a)	7 (a)	(2)
	9 (d)	10 (a)	(4)	8 (d)
	13 (d)	14 (b)	(0)	12 (c)
	477	2, (6)	15 (b)	16 (4)

17

21

25

(c)

(a)

(c)

18

22

26

(a)

(a)

(d)

(d)

(d)

(c)

19

23

27

16

20

24

28

(d)

(b)

(b)

(c)

	Activity to the second							en anderself mention of the transmitted	Annual Constraint of Constraint C
29	(a)	30	(d)	a. Diversion in the contract of the contract o	31	(d)		32	(a)
33	(p)	34	(a)		35	(c)		36	(c)
37	(a)	38	(c)		39	(b)		40	(c)
41	(b)	42	(c)		43	(c)		44	(a)
45	(d)	46	(a)		47	(c)		48	(a)
49	(c)	50	(b)		51	(b)	7 w 3 w	52	(d)
53	(b)	54	(a)	CAR MADE	55	(a)		56	(a)
57	(c)	58	(c)		59	(a)		60	(c)
61	(c)	62	(a)		63	(a)		64	(b)
		1000	urtus un attiti M						