MYMENSINGH GIRLS' CADET COLLEGE

SECOND TERM END EXAMINATION - 2025

CLASS: XII

MULTIPLE CHOICE QUESTIONS

STATISTICS

SECOND PAPER

[According to the Syllabus of 2026] TIME - 25 minutes

FULL MARKS - 25

Subject Code	e: 1	3	0

Set: Ka

[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball-point pen, the circle of the letter that stands for the correct/best answer in the "Answer sheet" for the Multiple Choice Questions Examination.]

Candidates are asked not to leave any mark or spot on the question paper.

1.	Which	is	$\mathbf{a}\mathbf{n}$	example	of	$_{ m time}$	series	data?
----	-------	----	------------------------	---------	----	--------------	--------	-------

- (a) Number of calls received by a call center each month
- (b) Height of children at different ages
- (c) Tota salary of all employees at a company
- (d) Population of different countries in 2020

2. Which can measure trend most precisely?

(a) Graphical method

(b) Semi-average method

(c) Moving average method

(d) Quarter-average method

Answer the next THREE questions based on the following information

Year	2016	2017	2018	2019	2020	2021	2022	2023
USD Exchange Rate	78.35	79.49	82.87	83.26	84.60	84.37	85.80	106.70

3. What is the second value of semi-average method?

- (b) 90.37
- (c) 91.73
- (d) 89.78

4. What kind of a trend do the data have?

(a) Upward

- (b) Downward
- (c) Both upward & downward
- (d) No trend

5. Which component of time series is visible in the later part of the data?

- (a) Seasonal Variation (b) General Trend
- (c) Irregular Variation (d) Cyclic Variation

6.
$$^{n}p_{r} =$$

(a)
$$\frac{n!}{(n-r)!}$$

(b)
$$\frac{n!}{(n+r)!}$$

(c)
$$\frac{n!}{r!}$$

(d)
$$\frac{n!}{(r-n)!}$$

7. The probability of two disjoint sets happening together is:

- (a) 0.5
- (b) 0
- (c) 1

(d) $0 \le x < 1$

8. $P(A \cap B) = P(A) \times P(B)$ implies A & B are -

- (a) Disjoint
- (b) Independent
- (c) Joint
- (d) Independent

9. Tossing a die r times generates how many outcomes?

- (b) r^6
- (c) 6^r
- (d) 2^r

Answer the next three questions using the following information

$$P(C) = \frac{2}{5}, P(D) = \frac{3}{4} \& P(C \cup D) = \frac{9}{10}$$

- 10. $P(C \cap D) = ?$
 - (a) $\frac{1}{10}$
- (b) $\frac{1}{4}$
- (c) $\frac{7}{20}$
- (d) $\frac{4}{5}$

- 11. $P(C \cap \bar{D}) = ?$
 - (a) $\frac{1}{10}$
- (b) $\frac{2}{5}$
- (c) $\frac{2}{20}$
- (d) $\frac{3}{10}$

	(a) $\frac{17}{20}$	(b) $\frac{7}{10}$	(c) $\frac{3}{4}$	(d) $\frac{11}{20}$
	Answer the next TV	WO questions based or	n the following inform	ation.
	An urn contains 5 red,	7 blue, and 8 green balls	3.	
13.	What is the probab	ility that the ball drav	wn is red?	
	(a) 0.26	(b) 0.25	(c) 0.2	(d) 0.4
14.	P(The ball drawn is	not blue)–		
	(a) $\frac{13}{20}$	(b) 0.5	(c) $\frac{7}{20}$	(d) $\frac{8}{20}$
15.	Which one is NOT	an example of a conti	nuous random variable	<u> </u>
	(a) Weight	(b) Height	(c) Time	(d) Size of television
	i. $\sum P(X) = 1$ ii. $P(X) \ge 0$ for all X iii. Each probability co	discrete probability d		
	Which one is correct			()
	(a) i and ii	(b) ii and iii	(c) i and iii	(d) i, ii, and iii
17.	What is $F(-\infty)$ for	a distribution function	$\mathbf{n} F(x)$?	
	(a) $-\infty$	(b) -1	(c) 0	(d) 1
	Answer the next tw	o questions based on	the following informat	ion
		$\frac{x}{P(x)}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
18.	What is $F(2)$?			
	(a) $\frac{2}{3}$	(b) $\frac{5}{6}$	(c) $\frac{1}{2}$	(d) 1
19.	$P(1 < X \le 2)$			
	(a) $\frac{5}{6}$	(b) $\frac{2}{3}$	(c) $\frac{1}{2}$	(d) $\frac{1}{6}$
20.	If $E(X) = 4$ and $V(X)$	$E(X) = 5$, what is $E(X^2)$?		
	(a) 9	(b) 16	(c) 21	(d) 25
91	E(4x+2Y) = ?	,		. ,
21.		(b) $4E(X) + 2E(Y)$	(c) $2E(X) + 4E(Y)$	(d) $E(X) \times E(Y)$
22.				alue of the random variable
	(a) Arithmetic Mean	(b) Expectation	(c) Variance	(d) Co-variance
23.	If $E(X) = -0.5$, then	E(1-2X) = ?		
	(a) 0	(b) -1	(c) 2	(d) 1
24	The possible relation	nship between $E(X)an$. ,	. ,
<i>2</i> 1.	i. $E(X) \ge E(X^2)$ ii. $E(X) \le E(X^2)$ iii. $E(X) = E(X^2)$	isinp between B(31)w		
	Which one is correct	t?		
	(a) i and ii	(b) i and iii	(c) ii and iii	(d) i, ii and iii
25.	What is the value o	f V(2X+5)?		
	(a) $4V(X) - 5$	(b) 20	(c) $4V(X)$	(d) 0
	"W		another person with an op Edwards Deming	pinion."

12. What is the probability that D occurs or C does not occur?

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SECOND PAPER

[According to the Syllabus of 2026]

TIME - 25 minutes FULL MARKS - 25 Subject Code: 1 3 0

Set: Kha

[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball- point pen, the circle of the letter that stands for the correct/best answer in the "Answer sheet" for the Multiple Choice Questions Examination.]

ре	en, the circle of the lette		ions Examination.	Answer sneet for the M				
	Candidates ar		any mark or spot on th	e question paper.				
1.	$^{n}p_{r}=$							
	(a) $\frac{n!}{(n-r)!}$	(b) $\frac{n!}{(n+r)!}$	(c) $\frac{n!}{r!}$	$(d) \frac{n!}{(r-n)!}$				
2.	The probability of t	wo disjoint sets happe	ening together is:					
	(a) 0.5	(b) 0	(c) 1	(d) $0 \le x < 1$				
3.	$P(A \cap B) = P(A) \times P$	(B) implies A & B are	e –					
	(a) Disjoint	(b) Independent	(c) Joint	(d) Independent				
4.	Tossing a die r time	s generates how many	outcomes?					
	(a) $6 \times r$	(b) r^6	(c) 6^r	(d) 2^r				
			e following information	n				
	$P(C) = \frac{2}{5}, P(D) = \frac{3}{4} \&.$	$P(C \cup D) = \frac{9}{10}$						
5.	$P(C \cap D) = ?$	6 X 1	7	7 - N - A				
	(a) $\frac{1}{10}$	(b) $\frac{1}{4}$	(c) $\frac{7}{20}$	(d) $\frac{4}{5}$				
6.	$P(C \cap \bar{D}) = ?$							
	(a) $\frac{1}{10}$	(b) $\frac{2}{5}$	(c) $\frac{2}{20}$	(d) $\frac{3}{10}$				
7.	7. What is the probability that D occurs or C does not occur?							
	(a) $\frac{17}{20}$	(b) $\frac{7}{10}$	(c) $\frac{3}{4}$	(d) $\frac{11}{20}$				
	Answer the next TV	WO questions based or	n the following inform	ation.				
	An urn contains 5 red,	7 blue, and 8 green balls	3.					
8.	What is the probab	ility that the ball drav	wn is red?					
	(a) 0.26	(b) 0.25	(c) 0.2	(d) 0.4				
9.	P(The ball drawn is	not blue)–						
	(a) $\frac{13}{20}$	(b) 0.5	(c) $\frac{7}{20}$	(d) $\frac{8}{20}$				
10.	Which one is NOT	an example of a conti	nuous random variable	; —				
	(a) Weight	(b) Height	(c) Time	(d) Size of television				
11.	The properties of a	discrete probability d	istribution table are-					
	i. $\sum P(X) = 1$							
	ii. $P(X) \ge 0$ for all X							
	iii. Each probability co	presponds to a discrete v	alue.					
	Which one is correc							
	(a) i and ii	(b) ii and iii	(c) i and iii	(d) i, ii, and iii				
12.	What is $F(-\infty)$ for	a distribution function	f(x)?					
	(a) $-\infty$	(b) -1	(c) 0	(d) 1				

Answer the next two questions based on the following information

13.	What is $F(2)$?									
	(a) $\frac{2}{3}$	(1	o) $\frac{5}{6}$			(c) $\frac{1}{2}$			(d) 1	
14.	$P(1 < X \le 2)$									
	(a) $\frac{5}{6}$	(1	o) $\frac{2}{3}$			(c) $\frac{1}{2}$			(d) $\frac{1}{6}$	
15.	If $E(X) = 4$ and V	V(X) =	5, wh a	at is E	(X^2) ?					
	(a) 9	(1	o) 16			(c) 21			(d) 25	
16.	What is the value	e of V	(2X+5)?						
	(a) $4V(X) - 5$	(1	o) 20			(c) $4V$	(X)		(d) 0	
17.	E(4x+2Y) = ?									
	(a) $E(X) - E(Y)$	(1	o) 4E(X	(1) + 2E	(Y)	(c) 2E	(X) + 4	E(Y)	(d) $E(X) \times E(Y)$	
18.	What is the experiments from their mean?		alue o	f of the	e squar	ed dev	iation	of the	value of the random	variable
	(a) Arithmetic Mea	n (l	o) Expe	ctation		(c) Vai	riance		(d) Co-variance	
19.	If $E(X) = -0.5$, th	nen $E($	1-2X) =?						
	(a) 0	(1	o) -1			(c) 2			(d) 1	
20.	The possible rela	tionsh	ip bet	ween E	Z(X)and	$dE(X^2)$				
i. $E(X) \geq E(X^2)$ ii. $E(X) \leq E(X^2)$ iii. $E(X) = E(X^2)$										
	Which one is cor	rect?								
	(a) i and ii	(1	o) i and	iii		(c) ii a	nd iii		(d) i, ii and iii	
21.	(a) Number of calls(b) Height of childr(c) Tota salary of a(d) Population of d	receive en at d ll empl	ed by a ifferent oyees at	call cenages	iter each	n month				
22.	Which can measu	ire tre	end mo	st pred	cisely?					
	(a) Graphical method	od				(b) Sei	ni-avera	age meth	nod	
	(c) Moving average					· /		verage n		
	Answer the next	THRI	EE que	estions	based	on the	follow	ing info	ormation	
US	Year SD Exchange Rate	2016 78.35	2017 79.49	2018 82.87	2019 83.26	2020 84.60	2021 84.37	2022 85.80	2023 106.70	
23.	What is the secon	nd val	ue of s	emi-av	erage 1	\mathbf{method}	1?			
	(a) 85.40	(l	o) 90.37	•		(c) 91.	73		(d) 89.78	
24.	What kind of a t	rend d	lo the	data h	ave?					
(a) Upward (b) Downward										
	(c) Both upward &	downw	ard			(d) No	trend			
25.	25. Which component of time series is visible in the later part of the data?									
	(a) Seasonal Variati	ion (l	o) Gene	ral Trei	nd	(c) Irre	egular V	Variation	d (d) Cyclic Variation	
	"Without data, you're just another person with an opinion." — William Edwards Deming									

iii. $E(X) = E(X^2)$

(a) i and ii

Which one is correct?

(b) i and iii

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[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball- point pen, the circle of the letter that stands for the correct/best answer in the "Answer sheet" for the Multiple Choice Questions Examination.]

	Candidates are	_	ions Examination.] iny mark or spot on th	ne question paper.
1.	Which one is NOT a	an example of a conti	nuous random variable	<u> </u>
	(a) Weight	(b) Height	(c) Time	(d) Size of television
2.	The properties of a	discrete probability d	istribution table are—	
	i. $\sum P(X) = 1$			
	ii. $P(X) \ge 0$ for all X			
	iii. Each probability co	rresponds to a discrete v	alue.	
	Which one is correct			
	(a) i and ii	(b) ii and iii	(c) i and iii	(d) i, ii, and iii
3.	What is $F(-\infty)$ for a	a distribution function	$\mathbf{n} F(x)$?	
	(a) $-\infty$	(b) -1	(c) 0	(d) 1
	Answer the next two	o questions based on	the following informat	ion
		X	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
		P(x)	$\left \begin{array}{c c} \frac{1}{3} & \frac{1}{2} & \frac{1}{6} \end{array}\right $	
4.	What is $F(2)$?			
	(a) $\frac{2}{3}$	(b) $\frac{5}{6}$	(c) $\frac{1}{2}$	(d) 1
5.	$P(1 < X \le 2)$	·	_	
	(a) $\frac{5}{6}$	(b) $\frac{2}{3}$	(c) $\frac{1}{2}$	(d) $\frac{1}{6}$
6.	If $E(X) = 4$ and $V(X)$. , 0
	(a) 9	(b) 16	(c) 21	(d) 25
7	What is the value of	()	()	()
١.	(a) $4V(X) - 5$	(b) 20	(c) $4V(X)$	(d) 0
0		(*) = 0	(-) ()	(4)
0.	E(4x+2Y) = ?	(b) $4E(X) \pm 2E(Y)$	(c) $2E(X) + 4E(Y)$	(d) $E(X) \vee E(Y)$
0				
9.	what is the expecte from their mean?	a value of of the squa	red deviation of the v	alue of the random variable
	(a) Arithmetic Mean	(b) Expectation	(c) Variance	(d) Co-variance
10.	If $E(X) = -0.5$, then	E(1-2X) = ?		
	(a) 0	(b) -1	(c) 2	(d) 1
11.	The possible relation	nship between $E(X)an$	$adE(X^2)$	
	i. $E(X) \ge E(X^2)$ ii. $E(X) \le E(X^2)$		•	

(c) ii and iii

(d) i, ii and iii

	(b) Height of childs			0						
	(c) Tota salary of all employees at a company(d) Population of different countries in 2020									
10										
13.	Which can measure trend most precisely?						mi arran	oro motl	and	
	(a) Graphical method (a) Moving average method							age metl		
	(c) Moving average method Answer the next THREE questions based							verage m		
		. 11111	ur que	SHOHS	baseu	on the	IOHOW	mg mic	or mation	
	Year	2016	2017	2018	2019	2020	2021	2022	2023	
US	SD Exchange Rate	78.35	79.49	82.87	83.26	84.60	84.37	85.80	106.70	
14.	What is the seco	nd val	ue of s	emi-av	erage 1	method	1?			
	(a) 85.40 (b) 90.37					(c) 91.			(d) 89.78	
15	What kind of a	trend d	o the	data h	ave?					
10.	(a) Upward	or crita	io une	aava 11	ave.	(b) Do	wnward			
	(c) Both upward & downward						trend	•		
16	. , _			ioa ia r	ricible	,		ont of t	the date?	
10.	Which componer (a) Seasonal Variat						_		(d) Cyclic Variation	
1 -	,	1011 (1) dene	141 1101	iu	(0) 1110	guiai v	ariation	(u) Cyclic variation	
17.	$^{n}p_{r}=$		n l			nl			n!	
	(a) $\frac{n!}{(n-r)!}$	(1	o) $\frac{n!}{(n+1)!}$	r)!		(c) $\frac{n!}{r!}$			(d) $\frac{n!}{(r-n)!}$	
18.	The probability	of two	disjoir	nt sets	happe	ning to	gether	is:		
	(a) 0.5	(1	o) 0			(c) 1			(d) $0 \le x < 1$	
19.	$P(A \cap B) = P(A)$	$\times P(B)$	implie	es A &	B are	_				
	(a) Disjoint	(l	o) Indep	pendent		(c) Joi	nt		(d) Independent	
20.	Tossing a die r t	imes g	enerate	es how	many	outcon	nes?			
	(a) $6 \times r$	_	o) r^6			(c) 6^r			(d) 2^r	
	Answer the next	three	questi	ons usi	ing the	follow	ing inf	ormatic	on	
	$P(C) = \frac{2}{5}, P(D) =$	$\frac{3}{4}\&P(C)$	$C \cup D) =$	$=\frac{9}{10}$						
21.	$P(C \cap D) = ?$									
	(a) $\frac{1}{10}$	(1	o) $\frac{1}{4}$			(c) $\frac{7}{20}$			(d) $\frac{4}{5}$	
22	$P(C \cap \bar{D}) = ?$		1			20				
	(a) $\frac{1}{10}$	(1	$(2) \frac{2}{5}$			(c) $\frac{3}{20}$			(d) $\frac{3}{10}$	
9 2	10			D occu	ire or (not oc	our?	(/ 10	
∠ 3 .	What is the probability (a) $\frac{17}{20}$	_	$(\frac{7}{10})$	D occi	irs or v	(c) $\frac{3}{4}$	пот ос	cur:	(d) $\frac{11}{20}$	
	Answer the next		10	ions ba	sed on	` / 4	llowing	r inforn		
	An urn contains 5		_				110 11 11 1	, 11110111		
24	What is the prol					n is re	d?			
_ 1.	(a) 0.26	_	o) 0.25		ii araw	(c) 0.2			(d) 0.4	
25	P(The ball draw	,	,)		· / · -			· ,	
۷٠.	(a) $\frac{13}{20}$		ot brue _. 5) 0.5	,		(c) $\frac{7}{20}$			(d) $\frac{8}{20}$	
	(12) 20	`	,			-0				
		"With	out dat		-	nother p dwards			opinion."	

12. Which is an example of time series data?

(a) Number of calls received by a call center each month

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[N.B. – Answer all the questions. Each question carries ONE mark. Block fully, with a black ball- point the circle of the letter that stands for the correct/best answer in the "Answer sheet" for the Multiple

pen, the circle of the	e letter that star	Choice Que	,			Answer sneet	for the Multiple
Candidat	ses are asked n	-			-	the question	paper.
1. What is the va	lue of $V(2X+5)$	5)?					
(a) $4V(X) - 5$	(b) 20		(c) $4V$	(X)		(d) 0	
2. If $E(X) = 4$ and	V(X) = 5, wh	at is $E(X^2)$)?				
(a) 9	(b) 16		(c) 21			(d) 25	
3. $E(4x+2Y) = ?$							
(a) $E(X) - E(Y)$	(b) 4E(X	(X) + 2E(Y)	(c) 2E	(X) + 4	E(Y)	(d) $E(X) \times$	E(Y)
4. What is the ex- from their mea	_	${ m f}$ of the ${ m sq}$	uared dev	riation	of the	value of the 1	andom variable
(a) Arithmetic M	tean (b) Expe	ectation	(c) Va	riance		(d) Co-varia	ance
5. If $E(X) = -0.5$,	then $E(1-2X)$) =?					
(a) 0	(b) -1		(c) 2			(d) 1	
6. The possible re	elationship bet	ween $E(X)$) $and E(X^2)$				
i. $E(X) \ge E(X^2)$ ii. $E(X) \le E(X^2)$ iii. $E(X) = E(X^2)$	2)						
Which one is co	orrect?						
(a) i and ii	(b) i and	l iii	(c) ii a	nd iii		(d) i, ii and	iii
7. Which is an ex	ample of time	series data	a?				
(a) Number of ca	lls received by a	call center	each month	L			
(b) Height of chil							
(c) Tota salary of			y				
(d) Population of							
8. Which can mea		ost precise					
(a) Graphical me			\		age metl		
(c) Moving average			· / •		verage n		
Answer the nex	xt IHREE que	estions das	sea on tne		ing ini	ormation	
Year USD Exchange Rate	2016 2017 e 78.35 79.49		19 2020 .26 84.60	2021 84.37	2022 85.80	$\frac{2023}{106.70}$	
ODD Exchange Rate	10.00 19.49	04.01 00	.26 84.60	04.01	00.00	100.70	
9. What is the sec	cond value of s	semi-avera	ge method	1?			
(a) 85.40	(b) 90.37	7	(c) 91.	73		(d) 89.78	
10. What kind of a	trend do the	data have	?				

(a) Upward

(b) Downward

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(d) No trend

11. Which component of time series is visible in the later part of the data?

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	(a) 0.5	(b) 0	(c) 1	(d) $0 \le x < 1$
14.	$P(A \cap B) = P(A) \times P(A)$	B) implies A & B are	_	
	(a) Disjoint	(b) Independent	(c) Joint	(d) Independent
15.	Tossing a die r times	generates how many	outcomes?	
	(a) $6 \times r$	(b) r^6	(c) 6^r	(d) 2^r
			following information	1
	$P(C) = \frac{2}{5}, P(D) = \frac{3}{4} \& P$	$P(C \cup D) = \frac{9}{10}$		
16.	$P(C \cap D) = ?$	1	7	4
	(a) $\frac{1}{10}$	(b) $\frac{1}{4}$	(c) $\frac{7}{20}$	(d) $\frac{4}{5}$
17.	$P(C \cap \bar{D}) = ?$			
	(a) $\frac{1}{10}$	(b) $\frac{2}{5}$	(c) $\frac{2}{20}$	(d) $\frac{3}{10}$
18.	What is the probabil	ity that D occurs or 0	C does not occur?	
	(a) $\frac{17}{20}$	(b) $\frac{7}{10}$	(c) $\frac{3}{4}$	(d) $\frac{11}{20}$
			the following informa	ation.
	An urn contains 5 red,	7 blue, and 8 green balls.		
19.	-	ity that the ball draw		(1) 0 4
	(a) 0.26	(b) 0.25	(c) 0.2	(d) 0.4
20.	P(The ball drawn is	•	7	9
	(a) $\frac{13}{20}$	(b) 0.5	(c) $\frac{7}{20}$	(d) $\frac{8}{20}$
21.	Which one is NOT a	_	uous random variable	
	(a) Weight	(b) Height	(c) Time	(d) Size of television
22.	The properties of a contain $\sum P(X) = 1$	liscrete probability di	stribution table are–	
	ii. $P(X) \ge 0$ for all X			
	-	responds to a discrete va	lue.	
	Which one is correct		() 1	(1) 1
	(a) i and ii	(b) ii and iii	(c) i and iii	(d) i, ii, and iii
23.		distribution function		(1) 1
	(a) $-\infty$	(b) -1	(c) 0	(d) 1
	Answer the next two		he following informati	OII
		$\frac{x}{P(x)}$	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	
24.	What is $F(2)$?			
	(a) $\frac{2}{3}$	(b) $\frac{5}{6}$	(c) $\frac{1}{2}$	(d) 1
25.	$P(1 < X \le 2)$			
	(a) $\frac{5}{6}$	(b) $\frac{2}{3}$	(c) $\frac{1}{2}$	(d) $\frac{1}{6}$
	v	· ·	nother person with an op	v
	VV I		dwards Deming	