

**MYMENSINGH GIRLS' CADET COLLEGE**  
**PRETEST EXAMINATION - 2025**  
**CLASS: XII**  
**MULTIPLE CHOICE QUESTIONS**  
**STATISTICS**  
**SECOND PAPER**  
[According to the Syllabus of 2026]  
**TIME – 25 minutes**  
**FULL MARKS – 25**

Subject Code: 

1	3	0
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Set: 

Ka
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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 asked not to leave any mark or spot on the question paper.**

**1. The minimum value of probability is**

- (a)  $-\alpha$       (b) 1      (c) 0      (d) -1

**2. Let the sample space be  $S = \{1, 2, 3, \dots, 10\}$ . Which of the following pairs of events are disjoint?**

- i. A: Number is a multiple of 4,    B: Number is odd
- ii. A: Number is less than 4,    B: Number is greater than 8
- iii. A: Number is a square,    B: Number is even

**Which one is correct?**

- (a) i and ii      (b) i and iii      (c) ii and iii      (d) i, ii and iii

**3. Two fair coins are tossed simultaneously. What is the probability of getting exactly one head?**

- (a)  $\frac{1}{4}$       (b)  $\frac{1}{2}$       (c)  $\frac{3}{4}$       (d)  $\frac{1}{3}$

**Answer the next two questions based on the following information**

X	0	1	2
P(x)	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$

**4. What is F(1)**

- (a) 0.65      (b) 0.75      (c) 0.5      (d) 1

**5.  $P(X \leq 1 \leq 3) =$**

- (a) 0.75      (b) 0.70      (c) 0.95      (d) 1

**6. How many types of random variables are there?**

- (a) 2      (b) 3      (c) 4      (d) 5

**7. If  $P(x) = \frac{1}{20}; x = 1, 2, 3, \dots, 20$ , what is the standard deviation?**

- (a) 1      (b) 5.77      (c) 7.75      (d) 12.57

**8. If  $E(X) = -0.5$ , then  $E(1 - 2X) =$ ?**

- (a) 0      (b) -1      (c) 2      (d) 1

**9. X is a constant; what is the value of  $V(\frac{X}{2})$ ?**

- i) 0
  - ii)  $\frac{1}{2}$
  - iii)  $\frac{1}{4}$
- (a) ii      (b) i      (c) iii      (d) i and iii

**10. If  $V(X) = 5$ , what is  $V(2X + 5)$ ?**

- (a) 20      (b) 5      (c) 10      (d) 25

**11. What is the Standard Deviation of Binomial Distribution?**

- (a) np      (b) npq      (c) nq      (d)  $\sqrt{npq}$

**Answer the next two questions based on the following information.**

X is a binomial variate with expectation 4 and standard deviation  $\sqrt{3}$ .

**12. What are the values of the parameters (mean and probability)?**

- (a)  $16, \frac{1}{4}$       (b)  $16, \frac{3}{4}$       (c)  $15, \frac{1}{4}$       (d)  $10, \frac{1}{4}$

**13. What is  $P(X \neq 0)$ ?**

- (a) 0      (b) 0.01      (c) 0.99      (d) 1

**14. When is a binomial distribution positively skewed?**

- (a)  $p > q$       (b)  $p = q$       (c)  $p < q$       (d)  $p+q < 1$

**15. The no. of parameters in a Poisson distribution is —**

- (a) 1      (b) 2      (c) 3      (d) 4

**16. Which one is true of the parameter (m) of Poisson Distribution?**

- (a)  $m = 0$       (b)  $m < 0$       (c)  $m > 0$       (d)  $m = 1$

**17. The parameter of a Poisson Distribution is 5. What is its mean?**

- (a) 2      (b) 5      (c) 2.24      (d) 25

**18. What is the range of the mean of the Normal distribution?**

- (a)  $(-\infty, \infty)$       (b)  $(0, \infty)$       (c)  $(0, 1)$       (d)  $(-\infty, 0)$

**19. What is the relationship between the normal and standard normal distribution?**

- (a)  $Z = \frac{X+\mu}{\sigma}$       (b)  $Z = \frac{X-\mu}{\sigma}$       (c)  $Z = \frac{X-\sigma}{\mu}$       (d)  $Z = \frac{X-\mu}{\sigma^2}$

**20. What is the mean of standard normal distribution?**

- (a) -1      (b) 1      (c) 0      (d)  $\infty$

**21. In the standard normal distribution, how many parameters are there?**

- (a) 1      (b) 2      (c) 0      (d) 3

**22. The year for which an index number is calculated is called –**

- (a) Base year      (b) Index year      (c) Quantity year      (d) Current year

**23. If Laspeyres's index is 80 and Fisher's index is 120, what is the value of Paasche's index?**

- (a) 97.97      (b) 100      (c) 180      (d) 200

**24. An unknown constant of the population is called –**

- (a) Quantity      (b) Statistic      (c) Parameter      (d) Unit

**25. In which sampling method are all items equally likely**

- (a) Simple random sampling      (b) Quota sampling  
(c) Stratified sampling      (d) Cluster sampling

"It is easy to lie with statistics; it is easier to lie without them."

- Frederick Mosteller

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5. What is the Standard Deviation of Binomial Distribution?



Answer the next two questions based on the following information.

$X$  is a binomial variate with expectation 4 and standard deviation  $\sqrt{3}$ .



10. Let the sample space be  $S = \{1, 2, 3, \dots, 10\}$ . Which of the following pairs of events are disjoint?

- i. A: Number is a multiple of 4, B: Number is odd
  - ii. A: Number is less than 4, B: Number is greater than 8
  - iii. A: Number is a square, B: Number is even

**Which one is correct?**



- Two fair coins are tossed simultaneously. What is the probability of head?

- Answer the next two questions based on the following information

- What is  $F(1)$

X	0	1	2
P(x)	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$



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Answer the next two questions based on the following information

X	0	1	2
P(x)	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$

14. If  $P(x) = \frac{1}{20}; x = 1, 2, 3, \dots, 20$ , what is the standard deviation?  
 (a) 1 (b) 5.77 (c) 7.75 (d) 12.57
15. If  $E(X) = -0.5$ , then  $E(1 - 2X) = ?$   
 (a) 0 (b) -1 (c) 2 (d) 1
16. X is a constant; what is the value of  $V(\frac{X}{2})$ ?  
 i) 0  
 ii)  $\frac{1}{2}$   
 iii)  $\frac{1}{4}$   
 (a) ii (b) i (c) iii (d) i and iii
17. If  $V(X) = 5$ , what is  $V(2X + 5)$ ?  
 (a) 20 (b) 5 (c) 10 (d) 25

18. What is the Standard Deviation of Binomial Distribution?

- (a)  $np$  (b)  $npq$  (c)  $nq$  (d)  $\sqrt{npq}$

Answer the next two questions based on the following information.

X is a binomial variate with expectation 4 and standard deviation  $\sqrt{3}$ .

19. What are the values of the parameters (mean and probability)?  
 (a)  $16, \frac{1}{4}$  (b)  $16, \frac{3}{4}$  (c)  $15, \frac{1}{4}$  (d)  $10, \frac{1}{4}$
20. What is  $P(X \neq 0)$ ?  
 (a) 0 (b) 0.01 (c) 0.99 (d) 1
21. When is a binomial distribution positively skewed?  
 (a)  $p > q$  (b)  $p = q$  (c)  $p < q$  (d)  $p+q < 1$
22. The year for which an index number is calculated is called –  
 (a) Base year (b) Index year (c) Quantity year (d) Current year
23. If Laspeyres's index is 80 and Fisher's index is 120, what is the value of Paasche's index?  
 (a) 97.97 (b) 100 (c) 180 (d) 200
24. An unknown constant of the population is called –  
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25. In which sampling method are all items equally likely  
 (a) Simple random sampling (b) Quota sampling  
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Answer the next two questions based on the following information

X	0	1	2
P(x)	$\frac{1}{2}$	$\frac{1}{4}$	$\frac{1}{4}$

13. X is a constant; what is the value of  $V(\frac{X}{2})$ ?
- i) 0
  - ii)  $\frac{1}{2}$
  - iii)  $\frac{1}{4}$
- |        |       |         |               |
|--------|-------|---------|---------------|
| (a) ii | (b) i | (c) iii | (d) i and iii |
|--------|-------|---------|---------------|
14. If  $V(X) = 5$ , what is  $V(2X + 5)$ ?
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|--------|-------|--------|--------|
| (a) 20 | (b) 5 | (c) 10 | (d) 25 |
|--------|-------|--------|--------|
15. What is the Standard Deviation of Binomial Distribution?
- |        |         |        |                  |
|--------|---------|--------|------------------|
| (a) np | (b) npq | (c) nq | (d) $\sqrt{npq}$ |
|--------|---------|--------|------------------|
- Answer the next two questions based on the following information.  
X is a binomial variate with expectation 4 and standard deviation  $\sqrt{3}$ .
16. What are the values of the parameters (mean and probability)?
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|-----------------------|-----------------------|-----------------------|-----------------------|
| (a) $16, \frac{1}{4}$ | (b) $16, \frac{3}{4}$ | (c) $15, \frac{1}{4}$ | (d) $10, \frac{1}{4}$ |
|-----------------------|-----------------------|-----------------------|-----------------------|
17. What is  $P(X \neq 0)$ ?
- |       |          |          |       |
|-------|----------|----------|-------|
| (a) 0 | (b) 0.01 | (c) 0.99 | (d) 1 |
|-------|----------|----------|-------|
18. When is a binomial distribution positively skewed?
- |             |             |             |               |
|-------------|-------------|-------------|---------------|
| (a) $p > q$ | (b) $p = q$ | (c) $p < q$ | (d) $p+q < 1$ |
|-------------|-------------|-------------|---------------|
19. The no. of parameters in a Poisson distribution is —
- |       |       |       |       |
|-------|-------|-------|-------|
| (a) 1 | (b) 2 | (c) 3 | (d) 4 |
|-------|-------|-------|-------|
20. Which one is true of the parameter (m) of Poisson Distribution?
- |             |             |             |             |
|-------------|-------------|-------------|-------------|
| (a) $m = 0$ | (b) $m < 0$ | (c) $m > 0$ | (d) $m = 1$ |
|-------------|-------------|-------------|-------------|
21. The parameter of a Poisson Distribution is 5. What is its mean?
- |       |       |          |        |
|-------|-------|----------|--------|
| (a) 2 | (b) 5 | (c) 2.24 | (d) 25 |
|-------|-------|----------|--------|
22. What is the range of the mean of the Normal distribution?
- |                         |                   |              |                    |
|-------------------------|-------------------|--------------|--------------------|
| (a) $(-\infty, \infty)$ | (b) $(0, \infty)$ | (c) $(0, 1)$ | (d) $(-\infty, 0)$ |
|-------------------------|-------------------|--------------|--------------------|
23. What is the relationship between the normal and standard normal distribution?
- |                                |                                |                                |                                  |
|--------------------------------|--------------------------------|--------------------------------|----------------------------------|
| (a) $Z = \frac{X+\mu}{\sigma}$ | (b) $Z = \frac{X-\mu}{\sigma}$ | (c) $Z = \frac{X-\sigma}{\mu}$ | (d) $Z = \frac{X-\mu}{\sigma^2}$ |
|--------------------------------|--------------------------------|--------------------------------|----------------------------------|
24. What is the mean of standard normal distribution?
- |        |       |       |              |
|--------|-------|-------|--------------|
| (a) -1 | (b) 1 | (c) 0 | (d) $\infty$ |
|--------|-------|-------|--------------|
25. In the standard normal distribution, how many parameters are there?
- |       |       |       |       |
|-------|-------|-------|-------|
| (a) 1 | (b) 2 | (c) 0 | (d) 3 |
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