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Reg. No. :

Code No. : 6786

Sub. Code : HBAM 21

M.B.A. (CBCS) DEGREE EXAMINATION,
APRIL 2013.

Second Semester

Business Administration

QUANTITATIVE METHODS

(For those who joined in July 2012 onwards)

Time : Three hours

Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

1. The set of all subsets of a set is called
(a) Power set (b) Subset
(c) Equal set (d) Null set.
2. The n th term of A.P is
(a) ad (b) $(n - 1) d$
(c) $a(n - 1) d$ (d) $a + (n - 1) d a$.

3. The value of $\lim_{x \rightarrow 0} (x^2 + 2x + 5)$ is

- (a) 0 (b) 2
(c) 5 (d) 1.

4. The value of $\lim_{x \rightarrow 0} [x^3 - 2]$ is

- (a) 4 (b) 8
(c) 2 (d) 0.

5. The difference between the highest value and the lowest value in a set of data is

- (a) Range (b) Mean deviation
(c) Quartile deviation (d) Standard deviation.

6. The one half distance between first and third quartiles is

- (a) Range (b) Skewness
(c) Quartile deviation (d) Standard deviation.

7. The probability of not getting a head while tossing two coins simultaneously

- (a) 1 (b) $1/4$
(c) $1/2$ (d) 0.

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8. The mathematician associated with normal distribution is

- (a) Gauss (b) Bernoulli
(c) Demis Poisson (d) Pascal.

9. Index number can't be measured in terms of

- (a) Weight (b) Quantity
(c) Price (d) Value.

10. Fisher's ideal index is the _____ of Lasperyres and paasche indices

- (a) Geometric mean
(b) Mean
(c) Median
(d) Mode.

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b).

11. (a) How much will Rs. 10,000 amount at 10% per annum compound interest over 12 years?

Or

(b) Explain the types of functions with examples.

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12. (a) If $f(x) = \frac{x^2 - 4}{x - 2}$, then find the limit of $f(x)$ as $x \rightarrow 2$.

Or

(b) Explain the types of matrices.

13. (a) The marks of 100 students is given below. Find out the average.

Marks :	0-10	10-20	20-30	30-40	40-50
No.of students :	10	15	25	30	20

Or

(b) Find the median for the given data:

Income (Rs) :	700	1500	1200	600	2000
No. of employees :	20	40	30	15	30

14. (a) What is classical approach of probability? What are its limitations?

Or

(b) The mean and variance of binomial variate at 8 and 6. Find $P(X < 2)$.

15. (a) Explain the tests related to index numbers.

Or

(b) Write a note on cyclical variations and seasonal variations.

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[P.T.O.]



PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b).

16. (a) A market research team interviews 200 people asking each whether they use any or all the electrical items A, B, C. The team returns the following data :

Category of items :	A	B	C	AB	BC	AC	ABC
Numbers :	70	80	110	16	15	25	5

Are the returns consistent?

Or

- (b) Suppose you are appointed to a post carrying a scale of Rs. 8,000–400–16000, how much you drew after 15 years.
17. (a) If the total cost is $C = 50 + 10X + 25X^2$, Find the average cost and marginal cost when $X = 13$.

Or

- (b) What are the properties of inverse of matrix?
18. (a) List out the rules for tabulating data.

Or

- (b) Calculate the mean deviation about the mean for the data given below ; 12, 13, 80, 35, 43, 72, 59, 100, 53.

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19. (a) A shipment of fastners contain 2% with imperfect bolts. What is the probability that the shipment have exactly 5 imperfect bolts?

Or

- (b) If the income distribution of group of persons be normally distributed with a mean of Rs. 500 and standard deviation of Rs. 50, estimate the proportion of individuals with incomes between Rs. 550 and Rs. 600.

20. (a) Explain the classification of index numbers.

Or

- (b) Find the trend line for the following data:

Year :	2001	2002	2003	2004
Value :	512	472	464	474
Year :	2005	2006	2007	2008
Value :	490	560	584	596

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