

(GCF-1, GCF-3, GCF-5 to GCF-7, SCF-1, SCF-3, VCF-1 & VCF-3)

Test Booklet No.– 110011

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TIMING: 2 Hours

MAXIMUM MARKS: 100

PAPER: BUSINESS MATHEMATICS, REASONING & STATISTICS

(1) $\int \frac{dx}{x^2 + 2x - 3}$

(a) $\frac{1}{2} \log \left(\frac{x-1}{x+3} \right) + c$

(b) $\frac{1}{3} \log \left(\frac{1-x}{3+x} \right) + c$

(c) $\frac{1}{4} \log \left(\frac{x-1}{x+3} \right) + c$

(d) $\frac{1}{4} \log \left(\frac{x-1}{x+2} \right) + c$

(2) If $y = \sqrt{\frac{1-x}{1+x}}$

Find the value of $(1-x^2) \frac{dy}{dx}$

(a) y

(b) y^2

(c) $-y$

(d) $-y^2$

(3) The gradient of the curve $y = 2x^3 - 3x^2 - 12x + 8$ at $x = 0$ is : –

(a) -12

(b) 12

(c) 0

(d) None

(4) $\int (e^{3 \log x} + e^{x \log 3}) dx$

(a) $\frac{x^4}{4} + \frac{3^x}{\log 3} + C$

(b) $\frac{x^4}{4} + 3^x \log 3 + C$

(c) $\frac{1}{4} e^{3 \log x} + \frac{1}{3} e^{x \log 3} + C$

(d) None

- (5) If $f'(x) = x - 1$, then the equation of a curve $y = f(x)$ passing through the point $(2, 0)$ is given by:-
- (a) $f(x) = \frac{-x^2}{2} - x$
- (b) $f(x) = \frac{x^2}{2} + x$
- (c) $f(x) = \frac{x^2}{2} - x$
- (d) $f(x) = \frac{-x^2}{2} + x$
- (6) If 5th and 12th terms of an AP are 14 and 35 respectively, find the first term of AP.
- (a) 4
- (b) 2
- (c) 1
- (d) 3
- (7) Find the sum of n terms of the series whose n th term is $n(n+1)$.
- (a) $n(n+1)(n+2)$
- (b) $n(3n-1)$
- (c) $\frac{n(n+1)(2n+1)}{3}$
- (d) $\frac{n(n+1)(n+2)}{3}$
- (8) How much amount is required to be invested every year as to accumulate Rs. 7,96,870 at the end of 10 years, if interest compounded annually at 10% given that $A(10, 0.1) = 15.9374$?
- (a) Rs. 40,000
- (b) Rs. 45,000
- (c) Rs. 48,000
- (d) Rs. 50,000
- (9) How many diagonals are there in a polygon with n sides?
- (a) $\frac{n(n-1)}{2}$
- (b) $\frac{n(n-2)}{3}$
- (c) $\frac{n(n-3)}{2}$
- (d) $\frac{n(n-2)}{6}$

- (10) The income of a person is Rs. 3,00,000 in the first year and he receives an increment of Rs. 10,000 to his income per year for the next 19 years. Find the total amount, he received in 20 years?
- (a) Rs. 80,00,000
 (b) Rs. 79,00,000
 (c) Rs. 89,00,000
 (d) Rs. 90,00,000
- (11) How many terms of $3 + \frac{3}{2} + \frac{3}{4} + \dots$ are needed to give the sum $\frac{3069}{512}$?
- (a) 9
 (b) 10
 (c) 11
 (d) 12
- (12) The Sum of all natural numbers between 120 to 480, which are exactly divisible by 4 and 6?
- (a) 8820
 (b) 9300
 (c) 8700
 (d) 8600
- (13) $\begin{bmatrix} 1 \\ 2 \\ 5 \end{bmatrix} \times \begin{bmatrix} 3 & 4 & 5 & 6 \end{bmatrix}$
- (a) $\begin{bmatrix} 3 & 5 & 4 & 6 \\ 6 & 8 & 10 & 12 \\ 12 & 16 & 20 & 24 \end{bmatrix}$
- (b) $\begin{bmatrix} 3 & 4 & 5 & 6 \\ 6 & 8 & 10 & 12 \\ 15 & 20 & 25 & 30 \end{bmatrix}$
- (c) $\begin{bmatrix} 3 & 4 & 5 & 6 \\ 6 & 8 & 20 & 12 \\ 12 & 12 & 10 & 24 \end{bmatrix}$
- (d) $\begin{bmatrix} 3 & 4 & 5 & 6 \\ 6 & 8 & 10 & 12 \\ 24 & 16 & 16 & 12 \end{bmatrix}$
- (14) If $A = \{1, 2, 3\}$ and $R = \{ (1,1), (2,2), (3,3), (1,2), (2,1), (2,3), (3,2) \}$ is a relation on A, then which one of the following is correct?
- (a) R is reflexive, symmetric and transitive.
 (b) R is reflexive, symmetric but not transitive.
 (c) R is reflexive, transitive but not symmetric.
 (d) R is reflexive, but neither symmetric nor transitive.

- (15) Solve: $\frac{3x-4}{2} \geq \frac{x+1}{4} - 1$
- (a) $x \geq 8$
(b) $x \leq 8$
(c) $x \geq 1$
(d) $x \leq 1$
- (16) Examine the nature of the roots of $3x^2 - 8x + 4 = 0$
- (a) Roots are real and unequal
(b) Roots are imaginary and unequal
(c) Roots are real, rational and unequal
(d) Roots are real, irrational and unequal
- (17) If α, β be roots of $2x^2 - 4x - 1 = 0$, find the value of $\alpha^3 + \beta^3$?
- (a) 11
(b) -11
(c) 22
(d) -22
- (18) Solve $x^3 - 6x^2 + 5x + 12 = 0$
- (a) 1, 3, 4
(b) -1, 3, 4
(c) 1, 6, 2
(d) 1, -6, -2
- (19) A fertilizer company produces two types of fertilizers called Grade I and Grade II. Each of these types is processed through two critical chemical plant units. Plant A has maximum 120 hrs available in a week and Plant B has maximum of 180 hrs available in a week. Manufacturing one bag of Grade-I fertilizer required 6 hours in Plant A and 4 hours in Plant B. Manufacturing one bag of Grade-II fertilizer required 3 hrs in Plant A and 10 hours in Plant B. Express this situation using linear inequalities.
- (a) $6x + 3y \leq 120, 4x + 10y \geq 180$
(b) $6x + 3y \geq 120, 4x + 10y \geq 180$
(c) $6x + 3y \leq 120, 4x + 10y \leq 180$
(d) $6x + 3y \geq 120, 4x + 10y \leq 180$
- (20) If $A = \{2, 3\}, B = \{4, 5\}, C = \{5, 6\}$ then $(A \times B) \cup (B \times C)$ is :-
- (a) $\{(2, 4), (2, 5), (2, 6), (3, 4), (3, 5), (3, 6)\}$
(b) $\{(2, 5), (3, 5)\}$
(c) $\{(2, 4), (2, 5), (3, 4), (4, 5), (3, 5), (4, 6), (5, 5), (5, 6)\}$
(d) None

(21) If $B = \begin{bmatrix} 1 & 1 \\ 8 & 3 \end{bmatrix}$

Evaluate $B^2 - 4B$.

(a) $\begin{bmatrix} 2 & -1 \\ 3 & -2 \end{bmatrix}$

(b) $\begin{bmatrix} 2 & 0 \\ 0 & 2 \end{bmatrix}$

(c) $\begin{bmatrix} 5 & -0 \\ 0 & -1 \end{bmatrix}$

(d) $\begin{bmatrix} 5 & 0 \\ 0 & 5 \end{bmatrix}$

- (22) In an examination 40% students failed in Mathematics, 30% failed in English and 10% failed in both. The percentage of students who passed in both subject is -

- (a) 20%
(b) 40%
(c) 60%
(d) 15%

- (23) A sum compounded annually become $\frac{25}{16}$ times of itself in 2 years, the rate of interest per annum is-

- (a) 5%
(b) 12.5%
(c) 25%
(d) 50%

- (24) Rs. 2,600 were given on interest in two parts. If simple interest of first part in 3 years with 5% interest rate is equal to simple interest of second part in 6 years with 4% interest rate. What is the second part?

- (a) Rs. 1,600
(b) Rs. 1,300
(c) Rs. 900
(d) Rs. 1,000

- (25) The ages (in years) of A and B are in the ratio 5:7. If A were 9 years older and B 9 years younger, the age of A would have been twice the age of B. The present age of B is -

- (a) 12 years
(b) 15 years
(c) 21 years
(d) 24 years

- (26) Which number should be subtracted from 23, 30, 57 and 78 so that remaining numbers are in proportion?

- (a) 4
(b) 5
(c) 6
(d) 7
- (27) At rate of interest 5% per annum compounded annually, what will be the ratio of principal amount and total amount after n years?
(a) $(22)^n : (21)^n$
(b) $(21)^n : (20)^n$
(c) $(20)^n : (21)^n$
(d) $(22)^n : (20)^n$
- (28) If Rs. 1380 is divided among A, B and C in such a way that A receives 5 times as much as B's share and is 3 times as much as C's share, then C's share is
(a) Rs. 300
(b) Rs. 600
(c) Rs. 900
(d) Rs. 180
- (29) If an examination a candidate was to pass in each of the 4 papers. In how many different ways can be failed?
(a) 14
(b) 16
(c) 17
(d) 15
- (30) Value of $\frac{2a^{1/2} \times a^{2/3} \times 6a^{-7/3}}{9a^{-5/3} \times a^{3/2}}$ if $a=4$
(a) $\frac{1}{3}$
(b) $\frac{1}{2}$
(c) $\frac{1}{4}$
(d) $\frac{1}{9}$
- (31) $\left(\frac{x^a}{x^{-b}}\right)^{(a^2-ab+b^2)} \times \left(\frac{x^b}{x^{-c}}\right)^{(b^2-bc+c^2)} \times \left(\frac{x^c}{x^{-a}}\right)^{(c^2-ac+a^2)} :$
(a) 1
(b) 0
(c) $x^{2(a^3+b^3+c^3)}$
(d) $x^{a^3+b^3+c^3}$

- (32) If $\frac{1}{\log_a t} + \frac{1}{\log_b t} + \frac{1}{\log_c t} = \frac{1}{\log_z t}$ then the value of Z.
- (a) abc
(b) a+b+c
(c) a(b+c)
(d) (a+b)c
- (33) If $x^{2a-3}y^{2a} = x^{6-a}y^{5a}$ then the value of $\log \frac{x}{y}$ is
- (a) logx
(b) 3logx
(c) 6logx
(d) 4logx
- (34) Assuming that the discount rate is 7% per annum, how much would you pay to receive Rs. 60 growing at 5%, annually , forever?
- (a) 3000
(b) 2500
(c) 4000
(d) 5000
- (35) In how many ways 6 men can sit at a round table so that all shall not have the same neighbour in any two occasions?
- (a) 5!
(b) $5! \div 2$
(c) $(7!)^2$
(d) 7!
- (36) If a,b,c are in A.P. then (b+c), (c+a), (a+b) are in _____
- (a) AP
(b) GP
(c) HP
(d) None
- (37) If $A = \begin{bmatrix} 2 & 0 & 0 \\ 0 & 2 & 0 \\ 0 & 0 & 2 \end{bmatrix}$, then A^5 is equal to :-
- (a) 32A
(b) 48A
(c) 16A
(d) 5A
- (38) If ${}^n P_r = 2880$ and ${}^n C_r = 120$ then the value of r is :-
- (a) -24
(b) 6
(c) 4
(d) 3

- (39) Let R is the set of real numbers, such that the function $f : R \rightarrow R$ and $g : R \rightarrow R$ are defined by $f(x) = x^2 + 3x + 1$ and $g(x) = 2x - 3$ find $f \circ g(-1)$:-
- (a) 10
(b) 12
(c) -11
(d) None
- (40) The number of arrangement of 15 different things taken 6 at a time in which are particular thing never occur is :-
- (a) ${}^{15}C_6$
(b) ${}^{15}P_6$
(c) ${}^{14}C_6$
(d) ${}^{14}P_6$
- (41) Choose the missing term out of the given alternatives.
PG, NJ, LM, JP ?
- (a) RG
(b) GR
(c) HS
(d) SH
- (42) What will be the next term of the following series?
1, 10, 37, 118, ____
- (a) 354
(b) 361
(c) 363
(d) 586
- (43) If $K = 11$ and $STEP = 15$, how will you code 'SISTRUM' ?
- (a) 16
(b) 17
(c) 19
(d) 48
- (44) Identify the odd one out.
- (a) Teacher
(b) Trainer
(c) Professor
(d) Student
- (45) In a certain code 'AMNESTY' is written as 'NMAEYTS'. How will 'BRIGADE' written in that code?
- (a) IRBGEDA
(b) EDAGBRI
(c) ADEGBRI
(d) EDAGIRB
- (46) A man started walking from his house towards south. After walking 6 km, he turned to his left and walked 5 km. Then he walked further 3 km after turning left. He then

- turned to his left and continued his walk for 9 km. How far is he away from his house?
- (a) 3 km
 - (b) 4 km
 - (c) 5 km
 - (d) 6 km
- (47) Prakash is moving toward East. He turn first left, then right, then left then right. Now in which direction he is moving?
- (a) North
 - (b) South
 - (c) East
 - (d) West
- (48) Five persons are sitting in a row. D is right to P and left to T. B is left to V and right to T. who are at the ends of the row?
- (a) D, T
 - (b) T, B
 - (c) P, V
 - (d) D, B
- (49) X is more richer than T. T is not as rich as D. S is not as rich as T or D. Who is the richest?
- (a) X
 - (b) T
 - (c) D
 - (d) S
- (50) A and B are Sisters. C and D are Brothers. Daughter of A is Sister of C, then how B is related to D?
- (a) Mother
 - (b) Grandmother
 - (c) Sister
 - (d) Aunty
- (51) A girl introduced a boy as the son of the daughter of the father of her paternal uncle. The boy is related to the girl as –
- (a) Son
 - (b) Uncle
 - (c) Nephew
 - (d) Cousin
- (52) A is B's daughter, B is C's Mother. D is C's brother. How is D related to A ?
- (a) Father
 - (b) Grand Father
 - (c) Brother
 - (d) Son
- (53) A man walks 5 km toward south and then turns to the north. After walking 3km he turns to the left and walks 5 km. Now his direction from starting point is?

- (a) West
- (b) North
- (c) North – East
- (d) South – West

- (54) If a cartoon containing a dozen mirrors is dropped. Which of the following cannot be the ratio of broken mirrors to unbroken mirrors?
- (a) 2:1
 - (b) 3:1
 - (c) 3:2
 - (d) 1:1

Directions (Q.N. 55-56) : Read the following instructions and answer the questions :-

- (i) Ram, Shyam, Harish, Mahesh and Rahim are five boys sitting along a circular table facing towards centre.
 - (ii) Harish is sitting immediately to the left of Rahim.
 - (iii) Ram is sitting between Mahesh and Rahim
- (55) Who is sitting to the immediate left side of Harish?
- (a) Rahim
 - (b) Mahesh
 - (c) Ram
 - (d) Shyam
- (56) Who is sitting between Shyam and Ram ?
- (a) Rahim
 - (b) Mahesh
 - (c) Harish
 - (d) Impossible to find

Directions (Q.No. 57-60) : Each of the following questions contains two or three statements followed by two conclusions numbered I and II. You have to consider the two or three statements to be true, even if they are to be at variance at the commonly known facts. You have to decide which of the given conclusion definitely follows from the given statements.

- (57) **Statements :**
Some buses are trains.
Some trains are boats.
Conclusions :
- i. Some trains are buses
 - ii. Some boats are buses
- (a) only I follows
 - (b) only II follows
 - (c) either I or II follows
 - (d) I and II follow

- (58) **Statements :**
All goats are flowers.
No flowers is branch.
Some branches are roots.

Conclusions:

- i. Some roots are goats
- ii. No root is goat
- (a) only I follows
- (b) only II follows
- (c) either I or II follows
- (d) neither I or II follows

(59) Statements:

All Tables are windows.
All Windows are rooms.
All rooms are buses.

Conclusions:

- I. Some Buses are Tables.
- II. Some rooms are tables.
- (a) only I follows
- (b) only II follows
- (c) either I or II follows
- (d) Both I and II follows

(60) Statements:

Some Cats are Cows.
All Cows are Horses.

Conclusions:

- I. All Horses are Cats
- II. Some Horses are Cats
- (a) only I follows
- (b) only II follows
- (c) either I or II follows
- (d) neither I or II follows

(61) The colour of a flower is an example of

- (a) An attribute
- (b) A variable
- (c) A discrete variable
- (d) A Continuous variable

(62) The data are known to be _____ if the data, as being already collected, are used by a different person or agency.

- (a) Primary
- (b) Secondary
- (c) Specialized
- (d) Subsidiary

(63) Mutually exclusive classification is usually meant for

- (a) A discrete variable
- (b) A continuous variable
- (c) An attribute
- (d) None of these

- (64) The following data relate to the marks of a group of students :

Marks	No. of Students
Below 10	15
Below 20	38
Below 30	65
Below 40	84
Below 50	100

How many students got marks more than 30?

- (a) 65
(b) 50
(c) 35
(d) 43
- (65) Which of the following is correct?
(a) AM = Assumed Mean + Arithmetic Mean of deviations of terms.
(b) GM = Assumed Mean + Arithmetic Mean of deviations of terms.
(c) Both
(d) None
- (66) The mean of set of observation is \bar{x} . If each observation is divided by α , $\alpha \neq 0$ and then is increased by 10, then the mean of the new set is
(a) \bar{x} / α
(b) $(\bar{x} + 10) / \alpha$
(c) $\frac{\bar{x}}{\alpha} + 10$
(d) $\alpha \bar{x} + 10$
- (67) The mean annual salary of all employees in a company is Rs. 25,000. The mean salary of male and female employees is Rs. 27,000 and Rs. 17,000 respectively. Find the percentage of males and females employed by the company.
(a) 60% and 40%
(b) 75% and 25%
(c) 70% and 30%
(d) 80% and 20%
- (68) The mean income of a group of workers is \bar{x} and that of another group is \bar{y} . If the number of workers in the second group is 10 times the number of workers in the first group, then the mean income of the combined group is
(a) $(\bar{x} + 10\bar{y})/5$
(b) $(\bar{x} + 10\bar{y})/11$
(c) $(10\bar{x} + \bar{y})/11$

- (d) $(\bar{x} + 10\bar{y})/9$
- (69) _____ is the reciprocal of the AM of reciprocal of observations.
- (a) HM
 - (b) GM
 - (c) Both
 - (d) None
- (70) A person purchases 5 rupees worth of eggs from 10 different markets. You are to find the average no. of eggs per rupee for all the markets taken together. What is the suitable form of average in this case _____
- (a) AM
 - (b) GM
 - (c) HM
 - (d) None
- (71) Which of the following relationship is true in a symmetrical distribution?
- (a) Median $-Q_1 = Q_3 - \text{Median}$
 - (b) Median $-Q_1 > Q_3 - \text{Median}$
 - (c) Median $-Q_1 < Q_3 - \text{Median}$
 - (d) Median $-Q_1 \neq Q_3 - \text{Median}$
- (72) Second decile is known as-
- (a) 40th Percentile
 - (b) 20th percentile
 - (c) 20th Decile
 - (d) 40th Decile
- (73) For ordering shoes of various sizes for resale, _____ size will be more appropriate
- (a) Median
 - (b) Mode
 - (c) Mean
 - (d) None
- (74) There were 50 students in a class. 10 failed whose average marks were 2.5. The total marks of class were 281. Find the average marks of students who passed?
- (a) 6.4
 - (b) 25
 - (c) 256
 - (d) 86
- (75) The average of 2 number is 20 and their standard deviation 5. Find the two numbers?
- (a) 15, 25
 - (b) 30, 40
 - (c) 10, 15
 - (d) None of these
- (76) Find mean deviations about median and also the corresponding coefficient for the following points ('000 Rs.) of a firm during a week.
82, 56, 75, 70, 52, 80, 68.

- (a) Rs. 8.714.28, 12.45
(b) Rs. 9.253.26, 15.23
(c) Rs. 8.263.50, 11.36
(d) Rs. 8.529.41, 13.24
- (77) "Root-mean square deviation from Mean" is
(a) Standard deviation
(b) Quartile deviation
(c) Both
(d) None
- (78) The standard deviation of first n natural numbers is-
(a) $\frac{[n(n+1)(2n+1)]}{6}$
(b) $(n^2 - 1) / 12$
(c) $\sqrt{\frac{n^2 - 1}{12}}$
(d) $n / 2$
- (79) The mean and Standard deviation of a sample of 100 observations were calculated as 40 and 5.1 respectively by a CA student who took one observation as 50 instead of 40 by mistake. The correct value of Standard deviation would be
(a) 4.90
(b) 5.00
(c) 5.88
(d) 4.85
- (80) If events are mutually exclusive, then-
(a) Their probabilities are less than one
(b) Their probabilities sum to one
(c) Both events cannot occur at the same time
(d) Both of them contain every possible outcome of an experiment.
- (81) If $P(A)=3/8$, $P(B)=1/3$ and $P(B^c)=1/4$ then $P(A^c)$ is equal to
(a) $5/8$
(b) $3/8$
(c) $1/8$
(d) None
- (82) The odds in favour of an event is 2 : 3 and odds against another event is 3 : 7. Find the probability that only one of the two events occurs.
(a) $\frac{27}{50}$
(b) $\frac{17}{50}$
(c) $\frac{37}{50}$
(d) $\frac{47}{50}$

- (83) In a single throw with two dice the probability of getting a sum of five on the two dice is
- (a) $1/9$
 - (b) $5/36$
 - (c) $5/9$
 - (d) None of these.
- (84) A card is drawn from a pack of playing cards and then another card is drawn without the first being replaced. What is the probability of getting two hearts?
- (a) $1/17$
 - (b) $1/4$
 - (c) $2/17$
 - (d) None of these.
- (85) A bag contains 2 Red, 3 Green, and 2 Blue balls. If 2 balls are drawn at random from the bag find the Probability that none of them will be Blue.
- (a) $11/21$
 - (b) $5/7$
 - (c) $10/21$
 - (d) $2/7$
- (86) An experiment succeeds twice as often as it fails. What is the probability that in next five trials there will be three success.
- (a) $192/243$
 - (b) $19/243$
 - (c) $80/243$
 - (d) $50/243$
- (87) A man can kill a bird once in five shots. The probabilities that a bird is not killed is
- (a) $4/5$
 - (b) $1/5$
 - (c) $3/5$
 - (d) $2/5$
- (88) X is a random variable taking the values 5, 6 and 7 with probabilities $1/3$, $1/4$ and $5/12$, then Find $E(X)$.
- (a) 5.14
 - (b) 6.08
 - (c) 7.12
 - (d) 3.29
- (89) A random variable X takes three values – 1, 2, 3 with the respective probabilities $P(-1) = 1/3$, $P(2) = 1/3$, $P(3) = 1/3$, then $E(|x|)$ is
- (a) $3/2$
 - (b) $-5/2$
 - (c) 2
 - (d) $9/2$
- (90) Binomial distribution is symmetrical is

- (a) $p > q$
(b) $p < q$
(c) $p = q = 0.50$
(d) None
- (91) If in a binomial distribution $n = 4$, $P(X = 0) = 16/81$, then $P(X = 4)$ is
(a) $1/16$
(b) $1/81$
(c) $1/27$
(d) $1/8$
- (92) If 2 per cent of electric bulbs manufactured by a company are known to be defectives, what is the probability that a sample of 150 electric bulbs taken from the production process of the company would contain more than two defective bulbs?
(a) 0.46
(b) 0.43
(c) 0.77
(d) 0.58
- (93) In standard normal distribution
(a) Mean = 1 SD = 0
(b) Mean = 1 SD = 1
(c) Mean = 0 SD = 1
(d) Mean = 0 SD = 0
- (94) The normal curve is
(a) Positively skewed
(b) Negatively skewed
(c) Symmetrical
(d) All of these.
- (95) Because of the symmetry of Normal distribution the median and the mode have the _____ value as that of the mean
(a) Greater
(b) Smaller
(c) Same
(d) None
- (96) The symbol $\phi(a)$ indicates the area of the standard normal curve between
(a) 0 to a
(b) a to ∞
(c) $-\infty$ to a
(d) $-\infty$ to ∞
- (97) If X & Y are two independent normal variates with means μ_1 & μ_2 and standard deviations σ_1 & σ_2 respectively, then $X + Y$ follows _____
(a) Means = $\mu_1 + \mu_2$, S.D = 0
(b) Means = $\mu_1 + \mu_2$, S.D = $\sigma_1^2 + \sigma_2^2$

- (c) Means = 0, S.D = $\sigma_1^2 + \sigma_2^2$
(d) Means = $\mu_1 + \mu_2$, S.D = $\sqrt{\sigma_1^2 + \sigma_2^2}$
- (98) In semi averages method, we divide the data into:
(a) Two parts
(b) Two equal parts
(c) Three parts
(d) Difficult to tell
- (99) Depression in business is:
(a) Secular trend
(b) Cyclical
(c) Seasonal
(d) Irregular
- (100) The multiplicative time series model is:
(a) $Y = T + S + C + I$
(b) $Y = T \times S \times C \times I$
(c) $Y = a + bX$
(d) $Y = a + bX + cX^2$

