SC

(132/A-31) SEAT No._____ No of printed page: 2

SARDAR PATEL UNIVERSITY

BBA (IB) SEM-I EXAMINATION (NC)

DATE: 29-10- 2018 **BUSINESS MATHEMATICS** **TIME: 2:00pm to 4:00pm**

Monday **Subject code: UM01CBBF07|B06** **Total Marks: 60**

Note: (1) Use of simple calculator is allowed
(2) Figures on right indicate marks

Q-1 (A) Explain the following terms: (5)

(1) Union of sets (2) Difference of sets

(B) If A=$\{x|\ x \leq 9, x \in N\}$, B=$\{y|\ 3 \leq y \leq 7\ and\ y\ is\ odd\ number\}$ and C={2,4,6} Verify that

(1) A-(BUC)= (A-B) ∩ (A-C) (2) A-(B∩C)= (A-B) ∪ (A-C) (5)

(C) If U=$\{x|\ 10 \leq x \leq 16, x \in N\}$, A={12,13,14} , B={13,14,15,16} verify De-Morgan rules (5)

OR

Q-1 (A) Explain the following terms: (5)

(1) Power set (2) Subset of a set

(B) If A={2,3,4}, B={3,4,5,6}, C={2,4,6,8} verify that (5)

(1) AUB = (A-B) U B (2) A∩(B-C) = (A∩B)-(A∩C)

(C) If A=$\{a, c\}$, B=$\{b, d\}$ and C=$\{b, c, e\}$ verify that A x (BUC)=(A x B) U (A x C)

Q-2 (A) Derive an equation of line passing through a point A (x_1, y_1) with slope m (5)

(B) Obtain the slope and intercepts on both the axes of line joining the points (3,-5) and (-7,9) (5)

(C) Find area of triangle whose vertices are A (5,5), B (2,1) and C (5,1) (5)

OR

Q-2 (A) Obtain an equation of straight line with slope m and making intercept c on y- axis (5)

(B) Find the equation of a line passing through (4,2) and parallel to 3x-2y=5 (5)

(C) Find the equation of line passing through (3,1) and the point of intersection of 4x+5y+7=0 and 3x-2y-12=0 (5)

(C.P.T.O.)

Q-3(A) If the interest is to be calculated on the quarterly, what will be the amount of interest at the end of 6^{th} year for Rs. 20000 at 12% rate of compound interest? (5)

(B) The production of a company at present is 40000 tons. It aims at 8% growth rate of production. Find out its production at the end of 5^{th} year. (5)

(C) Mittal industries Ltd. aims at producing 25000 tons after 5 years. If the production increases at the rate of 8% per year, what would be the production now? (5)

OR

Q-3 (A) Kotak finance Ltd. accepts fixed deposit for a stipulated period of five years. It pays interest yearly. Mr. X, a depositor receives at the maturity the sum of Rs.57775 against his investment of Rs.45268. Find the rate of interest. (5)

(B) The profit of a company is increasing annually at the rate of 10%. If the present day Profit is 77100, after how many years will it earn Rs 200000 annually?

(C) If the cost of building a house is Rs 3000000 at present and it increases at 8% in first Year,10% in the second year and 14% in the third year then find the total cost after three year.

Q-4 (A) The ratio of the speed between two trains is 7:8. If the second train runs 400 Km in 5 hours, find the speed of the first train. (5)

(B) 28 carpenters make 96 chairs in a certain period. How many carpenters will make 72 chairs in the same period. (5)

(C) A battalion had food for 65 days for 800 soldiers. After 10 days 300 more soldiers join. Find how long this food will last. (5)

OR

Q-4 (A) A candidate gets 65% votes in an election and wins by 2745 votes. Find the total number of votes cast. (5)

(B) The daily earnings of Madan and Mukta are Rs. 260 and 180 respectively. How much more should they earn, to have the ratio of their earnings as 4:3 (5)

(C) The population of a certain town is 20000. If the population of males increases by 10% and Females decreases by 6%,the total population remain same. Find the number of males and females. (5)

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