Model Question Paper

Interpolation and Fitting a Straight Line - Part I

12th Standard

Business Maths

Reg.No. : | | | | | | |

I.Answer all the questions.

II.Use blue pen only.

Time : 01:30:00 Hrs

Total Marks : 85

Part-A

5 x 1 = 5

1) $\Delta f(x) =$

(a) f(x+h) (b) f(x)− f(x+h) (c) f(x+h)−f(x) (d) f(x)− f(x−h)

2) $E^2 f(x) =$

(a) f(x+h) (b) f(x+2h) (c) f(2h) (d) f(2x)

3) E=

(a) 1+Δ (b) 1−Δ (c) ∇+1 (d) ∇−1

4) $\triangle f(x+3h) =$

(a) f(x+2h) (b) f(x+3h)- f(x+2h) (c) f(x+3h) (d) f(x+2h)−f(x− 3h)

5) When h =1,Δ(x^2) =

(a) 2x (b) 2x-1 (c) 2x+1 (d) 1

Part-B

5 x 6 = 30

6) Using Graphic method,find the value of y when x = 42,from the following data.

x:	20	30	40	50
y:	51	43	34	24

7) The population of a town is as follows.

Year x :	1940	1950	1960	1970	1980	1990
Population y : (in lakhs)	20	24	29	36	46	50

Estimate the population for the year 1976 graphically.

8) From the following data,find f(3)

x :	1	2	3	4	5
f(x) :	2	5	-	14	32

9) Find the missing term from the following data.

x :	0	5	10	15	20	25
y :	7	11	14	-	24	32

10) From the following data estimate the export for the year 2000

Year x:	1999	2000	2001	2002	2003
Export y : (in tons)	443	-	369	397	467

Part-C

5 x 10 = 50

11) Using Gregory-Newton's formula,find y(8) from the following data.

x :	0	5	10	15	20	25
y :	7	11	14	18	24	32

12) Using Gregory-Newton's formula, calculate the population for the year 1975

Year :	1961	1971	1981	1991	2001
Population :	98572	132285	168076	198690	246050

13) From the following data find the area of a circle of diameter 96 by using Gregory-Newton's formula

Diameter x:	80	85	90	95	100
Area y:	5026	5674	6362	7088	7854

14) Using Gregory-Newton's formula,find y (22.4)

x :	19	20	21	22	23
y :	91	100	110	120	131

15) From the following data find y(25) by using Lagrange's formula

x :	20	30	40	50
y :	512	439	346	243

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