



Q.No.	Answers	Mark																												
<b>SECTION A</b>																														
1	$y_c = a + bx$	<b>1</b>																												
2	55120	<b>1</b>																												
3	Irregular	<b>1</b>																												
4	4	<b>1</b>																												
<b>SECTION B</b>																														
5	$I = \frac{10}{100} (200000)(5) = 100000$ <p><math>n = 5 \text{ years} = 5 \times 12 = 60</math></p> <p>EMI is given by the formula</p> $EMI = \frac{P + I}{n}$ $EMI = \frac{200000 + 100000}{60} = \text{R.S } 5000$	<b>2</b>																												
6	$i = R/P$ $i/2 = 500/10000$ $i/2 = 5/100$ $i = 0.1$ $i = 10\%$																													
7	<table border="1"> <thead> <tr> <th>Year</th> <th>Y</th> <th>3 yearly moving total</th> <th>3 yearly moving average(Trend) (in ₹ lakh)</th> </tr> </thead> <tbody> <tr> <td>2016</td> <td>25</td> <td>---</td> <td>---</td> </tr> <tr> <td>2017</td> <td>30</td> <td>87</td> <td>29</td> </tr> <tr> <td>2018</td> <td>32</td> <td>102</td> <td>34</td> </tr> <tr> <td>2019</td> <td>40</td> <td>117</td> <td>39</td> </tr> <tr> <td>2020</td> <td>45</td> <td>135</td> <td>45</td> </tr> <tr> <td>2021</td> <td>50</td> <td>---</td> <td>--</td> </tr> </tbody> </table>	Year	Y	3 yearly moving total	3 yearly moving average(Trend) (in ₹ lakh)	2016	25	---	---	2017	30	87	29	2018	32	102	34	2019	40	117	39	2020	45	135	45	2021	50	---	--	<b>2</b>
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$$A = R \left( \frac{(1+i)^n - 1}{i} \right)$$

$$A = 2,00,000 \quad n = 10 \times 4 = 40$$

$$i = 0.015$$

$$2,00,000 = R \left( \frac{(1+0.015)^{40} - 1}{0.015} \right)$$

$$2,00,000 = R \left( \frac{1.015^{40} - 1}{0.015} \right)$$

$$3000 = R (1.8146 - 1)$$

$$R = \frac{3000}{0.8146} = 3,685$$

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$$P = 15,00,000 - 4,00,000$$

$$= 11,00,000$$

$$i = 0.0075 \quad n = 120$$

$$EMI = P \left( \frac{i}{1 - (1+i)^{-n}} \right)$$

$$= 11,60,000 \left( \frac{0.0075}{1 - (1.0075)^{-120}} \right)$$

$$= 11,000,000 \left( \frac{0.675}{1 - 0.4079} \right)$$

$$= 1,39,334.$$

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(a)

Year	Y	$X = \text{Year} - 2017$	$X^2$	$XY$
2015	35	-2	4	-70
2016	42	-1	1	-42
2017 ✓	46	0	0	0
2018	41	1	1	41
2019	48	2	4	96
$n = 5$	$\Sigma Y = 212$		$\Sigma X^2 = 10$	$\Sigma XY = 25$

$$Y = a + bx$$

$$a = \frac{\Sigma y}{n} = \frac{212}{5} = 42.4$$

$$b = \frac{\Sigma xy}{\Sigma x^2} = \frac{25}{10} = 2.5$$

$$y = 42.4 + 2.5x$$

(b)

$$y = 42.4 + 2.5 \times 3 = 49.9$$

(c)

$$y = 42.4 + 2.5 \times 5 = 54.9$$