Chapter 3. Banking

Ex 3.1

Answer 1.

(a) Make the entries in his passbook

There are 5 columns in a passbook: a) Date, b) Particulars, c) Withdrawals, d) Deposits, e) Balance. Date is the date of the transaction, Particular is the details of the transaction primarily the name, Withdrawal is the amount that has been taken out from account, Deposit is the amount that has been given to the account, balance is net amount remaining in the account after subtracting / Adding the amount as applicable. Keeping this in mind, the passbook entry will look as below:

Date	Particular	Withdrawals	Deposits	Balance
03.04.2007	By cash		5,000.00	5,000.00
11.04.2007	By Cheque		16,500.00	21,500.00
10.05.2007	To Self	4,000.00		17,500.00
07.07.2007	By Cheque	3,500.00		14,000.00
09.08.2007	By cash		6,000.00	20,000.00
12.10.2007	To Self	1,500.00		18,500.00

(b) If he closed the account on 14th December and if the rate of simple interest is 4% pa, then find the amount he received on closing the account.

Pls. note that there are June, September and November month where no transactions were made but the bank will give interest based on the amount which is reflected in the last month.

Months	Minimum balance between 10th day and the last day
Apr	5,000
May	17,500
June	17,500
July	14,000

Get More Learning Materials Here : CLICK HERE www.studentbro.in

July	14,000
Aug	20,000
Sep	20,000
Oct	18,500
Nov	18,500

Total principal for at the end of November = 1,31,000

Interest $= \frac{131000 \times 4 \times 1}{100 \times 12} = 436.67$

Thus, interest = Rs 437

Hence, while closing the account, Mr. Burman will get Principal + interest which amounts to:

Rs 18,500/- + Rs 437/- = Rs 18,937/-

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 2.

a. Make the entries in her passbook

Date	Particular	Withdrawals	Deposits	Balance
05.04.2007	By Cheque		11,000.00	11,000.00
12.05.2007	To Self	3,200.00		7,800.00
03.06.2007	By Cheque		8,800.00	16,600.00
18.06.2007	To Cheque	2,000.00		14,600.00

b. If the rate of simple interest was 5% pa compounded at the end of March and September, find her balance on 1.04.2008

According to the entries in passbook, the minimum balance for different months are as follows:

Months	Minimum balance between 10^{th} day and the last day	Minimum balance in nearest multiple of 10
2007, April	11000	11000
May	7800	7800
June	14600	14600
July	14600	14600
August	14600	14600
September	14600	14600
October	14600+322=14922	14920
November	14922	14920
December	14922	14920
2008, January	14922	14920
February	14922	14920
March	14922	14920

Total principal at the end of September 2007 = Rs $11000+7800+14600\times4$

= Rs 77200

Therefore interest at the end of sep. 2007 = $\frac{77200\times5\times1}{100\times12}$ = 321.66

Thus interest earned is Rs 322

Again, principal at the end of March, 2008 = 14920×6 = 89520

Therefore interest at the end of Mar. 2008 = $\frac{89520\times5\times1}{100\times12}$ = 373

Hence, Account balance as on 01.04.2008 is = Rs 14920 + Rs 373

= Rs 15293

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 3.

a. The principal amount in Jan, Feb and March which will be considered for interest for interest calculation.

Date	Particular	Withdrawals	Deposits	Balance	Qualifying amount
05.01.2008	By Cash		15,500.00	15,500.00	15,500.00
10.01.2008	To Cheque	4,800.00		10,700.00	10,700.00
15.02.2008	To Cheque	5,300.00		5,400.00	5,400.00
08.03.2008	By Cash		19,200.00	24,600.00	24,600.00
17.03.2008	By Cheque		7,400.00	32,000.00	24,600.00

January: Rs. 10,700.00/- as this is minimum of 10th and 31st Jan

February: Rs. 5,400.00/- as this is minimum of 10th and 28th Feb

March: Rs. 24,600.00/- as this is minimum of 10th and 31st March (including 17th March)

b. The interest she gets at the end of March.

Month	Minimum balance between 10th day and the last day
Jan	10,700.00
Feb	5,400.00
March	24,600.00

Total principal at the end of March = 40700

$$\text{Interest} = \frac{40700 \times 6 \times 1}{100 \times 12} = 203.50$$

Thus, interest = Rs 204

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 4.

Date	Particular	Withdrawals	Deposits	Balance
08.02.2008	By Cash		12,000.00	12,000.00
15.03.2008	To cash	3,000.00		9,000.00
08.04.2008	To Cheque	2,500.00		6,500.00
18.04.2008	By Cash		16,000.00	22,500.00
10.06.2008	By Cash		8, 00.00	30,500.00

Months	Minimum balance between 10th day and the last day
Feb.	12,000
Mar.	9,000
Apr.	6,500
May	22,500
June	30,500

Total Principal at the end of June = Rs 80,500

Interest = $\frac{80500 \times 6 \times 1}{100 \times 12}$ = 402.50 (Rs 403 appox.)

Hence, Mr. Rajesh will get Rs 403/- as interest amount towards the end of June 2008.

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 5.

Balance = Previous Balance + Deposit – Withdrawal. Using this formula, we get following values in Balance column

Date	Particular	Withdrawals	Deposits	Balance
01.04.2007	By B/F			16,500.00
15.04.2007	By Cash		2,500.00	19,000.00
09.06.2007	To Cheque	6,500.00		12,500.00
04.07.2007	By Cash		9,000.00	21,500.00
12.07.2007	To cash	3,500.00		18,000.00
05.09.2007	To Cash	4,000.00		14,000.00
10.11.2007	By Cheque		12,000.00	26,000.00

Interest earned by account holder in the month of November

Months	Minimum balance between 10th day and the last day
Apr	16,500
May	19,000
June	12,500
July	18,000
Aug	18,000
Sep	14,000
Oct	14,000
Nov	26,000

Total principal at the end of Nov = Rs 1,38,000

$$\text{Interest} = \frac{138000 \times 5 \times 1}{100 \times 12} = 575$$

Hence the interest earned is Rs 575.

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 6.

Months	Minimum balance between 10^{th} day and the last day
Jan	6,500
Feb	12,500
Mar	12,500
Apr	12,500
May	12,500
June	14,225
July	14,225
Aug	14,225
Sep	14,600
Oct	14,600
Nov	20,600
Dec	18,100

Principal at the end of Dec. = Rs 1,67,075

Interest = $\frac{167075 \times 5 \times 1}{100 \times 12} = 696.14$

Thus, interest is Rs 696.

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 7.

Months	Minimum balance between 10th day and the last day
Jan	14,200
Feb	11,750
Mar	27,350

Total principal at the end of March = Rs 53,300

Interest at the end of March = $\frac{53300 \times 4.5 \times 1}{100 \times 12} = 199.87$

Thus the interest is Rs 200

Now entering the interest in pass book we get the remaining balances as below:

Date	Particular	Withdrawals	Deposits	Balance
03.01.2006	By B/F			17,900.00
09.01.2006	To Cash	3,700.00		14,200.00
06.02.2006	To Cheque	2,450.00		11,750.00
21.02.2006	By Cash		15,600.00	27,350.00
17.03.2006	By Cash		9,850.00	37,200.00
31.03.2006	By Interest		200.00	37,400.00
06.06.2006	To Cheque	4,100.00		33,300.00
22.08.2006	To Cash	1,500.00		31,800.00
05.09.2006	By Cheque		17,300.00	49,100.00
09.09.2006	To Cash	6,300.00		42,800.00
30.09.2006	By Interest*		810.00	43,610.00
04.12.2006	To Cash	3,000.00		40,610.00
11.12.2006	By Cheque		11,760.00	52,370.00

* Interest calculated below.

For calculating interest at the end of September.

Months	Minimum balance between 10th day and the last day
Apr	37,400
May	37,400
June	33,300
July	33,300
Aug	31,800
Sep	42,800

Total principal at the end of September = Rs 216000

Interest = $\frac{216000 \times 4.5 \times 1}{100 \times 12} = 810$

Now entering the interest in the pass book above, we get the balance Rs 52,370 at the end o year.

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 8.

Months	Minimum balance between 10th day and the last day
Jan	39,040
Feb	31,440
Mar	35,790

Principal at the end of march = Rs 106270

Interest = $\frac{106270 \times 4.5 \times 1}{100 \times 12}$ = 398.51

So the interest is Rs 399

After substituting this interest the pass book is as follows:

Date	Particular	Withdrawals	Deposits	Balance
05.01.2008	By B/F			24,650.00
09.01.2008	By cash		14,390.00	39,040.00
15.02.2008	To Cheque	7,600.00		31,440.00
21.02.2008	By Cheque		8,350.00	39,790.00
07.03.2008	To Cash	4,000.00		35,790.00
31.03.2008	By Interest		399.00	36189.00
08.04.2008	By Cheque		13,670.00	49,859.00
12.04.2008	To Cash	6,000.00		43,859.00
01.05.2008	By Cheque		17,350.00	61,209.00
16.06.2008	By Cash		9,000.00	70,209.00
27.06.2008	To Cash	4,370.00		65839.00
04.07.2008	By Cheque		21,320.00	

Get More Learning Materials Here : CLICK HERE www.studentbro.in

				87,159.00
11.07.2008	To Cheque	9,460.00		77,699.00

Net Money that Mr. Punjwani will get is Rs 77,699/-.

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Ex 3.2

Answer 1.

Given that recurring deposit per month = Rs 500, Period= 4 years = 48 Months, R=6%

Money deposited = Monthly value x No of Months

$$= 500 \times 48 = \text{Rs } 24{,}000 \ldots\ldots (1)$$

Total Principal for 1 Month= $\text{Rs}\,\frac{500 \times (48)(48+1)}{2} = \text{Rs}\,5{,}88{,}000$

Interest = $\text{Rs}\,\frac{6 \times 5{,}88{,}000}{12 \times 100} = \text{Rs}\,2{,}940 \ldots\ldots (2)$

Hence Maturity Amount = (1) + (2)

$$= \text{Rs } (24{,}000 + 2{,}940)$$

Hence Maturity Amount = Rs 26,940

And Interest = Rs 2,940

Answer 2.

Given that Recurring deposit per month = Rs 900, Period= 3 years = 36 Months, R=8%

Money deposited = Monthly value x No of Months

$$= 900 \times 36 = \text{Rs } 32{,}400 \ldots\ldots (1)$$

Total Principal for 1 Month=$\text{Rs}\,\frac{900 \times (36)(36+1)}{2} = \text{Rs}\,5{,}99{,}400$

Interest = $\text{Rs}\,\frac{8 \times 5{,}99{,}400}{12 \times 100} = \text{Rs}\,3{,}996 \ldots\ldots (2)$

Hence Maturity Amount = (1) + (2)

$$= \text{Rs } (32{,}400 + 3{,}996)$$

Hence Maturity Amount = Rs 36,396

And Interest = Rs 3,996

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 3.

Given that Recurring deposit per month = Rs 2,250, Period= 3 years = 36 Months, R=R%, Maturity value =Rs 90,990

Money deposited = Monthly value x No of Months

=2,250 x 36= Rs 81,000

⇨ Interest that gets for this period = Maturity Value – Amount deposited = 90,990 – 81,000

= Rs 9,990

$$\text{Total Principal for 1 Month} = \text{Rs}\frac{2,250\times(36)(36+1)}{2} = \text{Rs}14,98,500$$

$$9,990 = \frac{R\times 14,98,500}{12\times 100}$$

$$\Rightarrow R = \frac{9,990\times 12\times 100}{14,98,500}$$

R= 8%

Answer 4.

Given that Recurring deposit per month =Rs 1,200, Period= 5 years = 60Months, R=R%, Maturity value =Rs 88,470

Money deposited = Monthly value x No of Months=1,200 x 60= Rs 72,000

⇨ Interest that gets for this period = Maturity Value – Amount deposited = Rs (88,470 – 72,000)

=Rs 16,470

$$\text{Total Principal for 1 Month} = \text{Rs}\frac{1,200\times(60)(60+1)}{2} = \text{Rs}21,96,000$$

$$\text{Rs}16,470 = \frac{R\times 21,96,000}{12\times 100}$$

$$\Rightarrow R = \frac{16,470\times 12\times 100}{21,96,000}$$

R= 9%

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 5.

Given that Recurring deposit per month = P, Period= 2 years = 24 Months, R=6%, Interest amount =Rs 1,125

Money deposited = Monthly value x No of Months= P x 24=Rs 24P

Total Principal for 1 Month= $Rs\frac{P\times(24)(24+1)}{2} = Rs300P$

Interest = Principal for One month x R / (12 x 100) ..... (1)

Putting Values in (1), we get

$$Rs1,125 = \frac{300P\times 6}{12\times 100}$$

$$P = Rs\frac{1,125\times 12\times 100}{300\times 6}$$

P=Rs 750

Maturity amount = P x 24 + Interest

= 750 x 24 + 1125

⇨ Maturity amount = 19,125

Answer 6.

Given that cumulative deposit per month = P, Period= 3 years = 36 Months, R=7%, Maturity amount =Rs 8,547

Money deposited = Monthly value x No of Months= P x 36= Rs 36P

Total Principal for 1 Month= $Rs\frac{P\times(36)(36+1)}{2} = Rs666P$

Interest = Principal for One month x R / (12 x 100) ..... (1)

Putting Values in (1), we get

$$Rs8,547 - 36P = \frac{666P\times 7}{12\times 100}$$

$$8547 - 36P = 3.885P$$

⇨ P= Rs 214.3

Interest amount = 8547-36P

= Rs 832

Interest amount = 832

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 7.

Given that cumulative deposit per month =Rs 3000, Period= t Months, R=9%, Maturity amount = Rs. 1,70,460

Money deposited = Monthly value x No of Months=3000 x t= Rs 3000t

Total Principal for 1 Month= $\frac{3000 \times (t)(t+1)}{2}$

$= 1500t^2 + 1500t$

Interest = Principal for One month x R / (12 x 100) ..... (1)

Putting Values in (1), we get

$$1,70,460 - 3000t = \frac{(1500t^2 + 1500t) \times 9}{1200}$$

$$1,70,460 - 3000t = \frac{45t^2 + 45t}{4}$$

$$45t^2 + 12045t - 681840 = 0$$

$45t^2 - 2160t + 14205t - 681840 = 0$

$45t(t - 48) + 14205(t - 48) = 0$

$(t - 48)(45t + 14205) = 0$

$t = 48, t = -\frac{14205}{45}$

The number of months cannot be negative.

Hence, t = 48 months = 4 years

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 8.

Given that, cumulative deposit per month = Rs 1200, Period= t Months, R=9%, Interest amount = Rs. 5328

Money deposited = Monthly value x No of Months=1200 x t= Rs 1200t

Total Principal for 1 Month= $\frac{1200 \times (t)(t+1)}{2}$

$= 600t^2 + 600t$

Interest = Principal for One month x R / (12 x 100) ..... (1)

Putting Values in (1), we get

$5328 = (600t^2 + 600t) \times 9/1200$

⇨ $5328 = (4.5t^2 + 4.5t)$

⇨ $4.5t^2 + 4.5t - 5328 = 0$

⇨ t = 34 months (approximately)

Thus, she paid 34 installments.

Answer 9.

Given that Recurring deposit per month = P, Period= 3 years = 36Months, R=8%, Maturity amount =Rs 20,220

Money deposited = Monthly value x No of Months=P x 36= Rs 36P

Total Principal for 1 Month= P x (36)(36+1)/2= Rs 666P

Interest = Principal for One month x R / (12 x 100) ..... (1)

Putting Values in (1), we get

$20220 - 36P = (666P \times 8) / (12 \times 100)$

⇨ $20220 - 36P = 4.44P$

⇨ $P = 20220/40.44$= Rs 500

Get More Learning Materials Here : CLICK HERE www.studentbro.in

Answer 10.

Given that Recurring deposit per month =Rs 2400, Period= 3 years = 18 Months, R=R%, Maturity value =Rs 47304

Money deposited = Monthly value x No of Months= 2400 x 18=Rs 43,200

⇨ Interest = Maturity Value – Amount deposited

=Rs (47,304 – 43,200) = Rs 4,104

Total Principal for 1 Month= 2400 x (18)(18+1)/2= Rs 4,10,400

⇨ 4104 = 410400 x R /1200

⇨ R= 12%

Get More Learning Materials Here : CLICK HERE www.studentbro.in