

Practical Manual

Agricultural Finance and Cooperation

Course Code AEC 226 Credit Hours 3(2+1)
(For Undergraduate Agricultural students)

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2020

College of Agriculture
RANI LAKSHMI BAI CENTRAL AGRICULTURAL UNIVERSITY
Jhansi-284003

Syllabus: Determination of most profitable level of capital use. Optimum allocation of limited amount of capital among different enterprise. Analysis of progress and performance of cooperatives using published data. Analysis of progress and performance of commercial banks and RRBs using published data. Visit to a commercial bank, cooperative bank and cooperative society to acquire firsthand knowledge of their management, schemes and procedures. Estimation of credit requirement of farm business – A case study. Preparation and analysis of balance sheet – A case study. Preparation and analysis of income statement – A case study. Appraisal of a loan proposal – A case study. Techno-economic parameters for preparation of projects. Preparation of Bankable projects for various agricultural products and its value added products. Seminar on selected topics.

Name of Student

Roll No.

Batch

Session

Semester

Course Name :

Course No. :

Credit

Published: 2020

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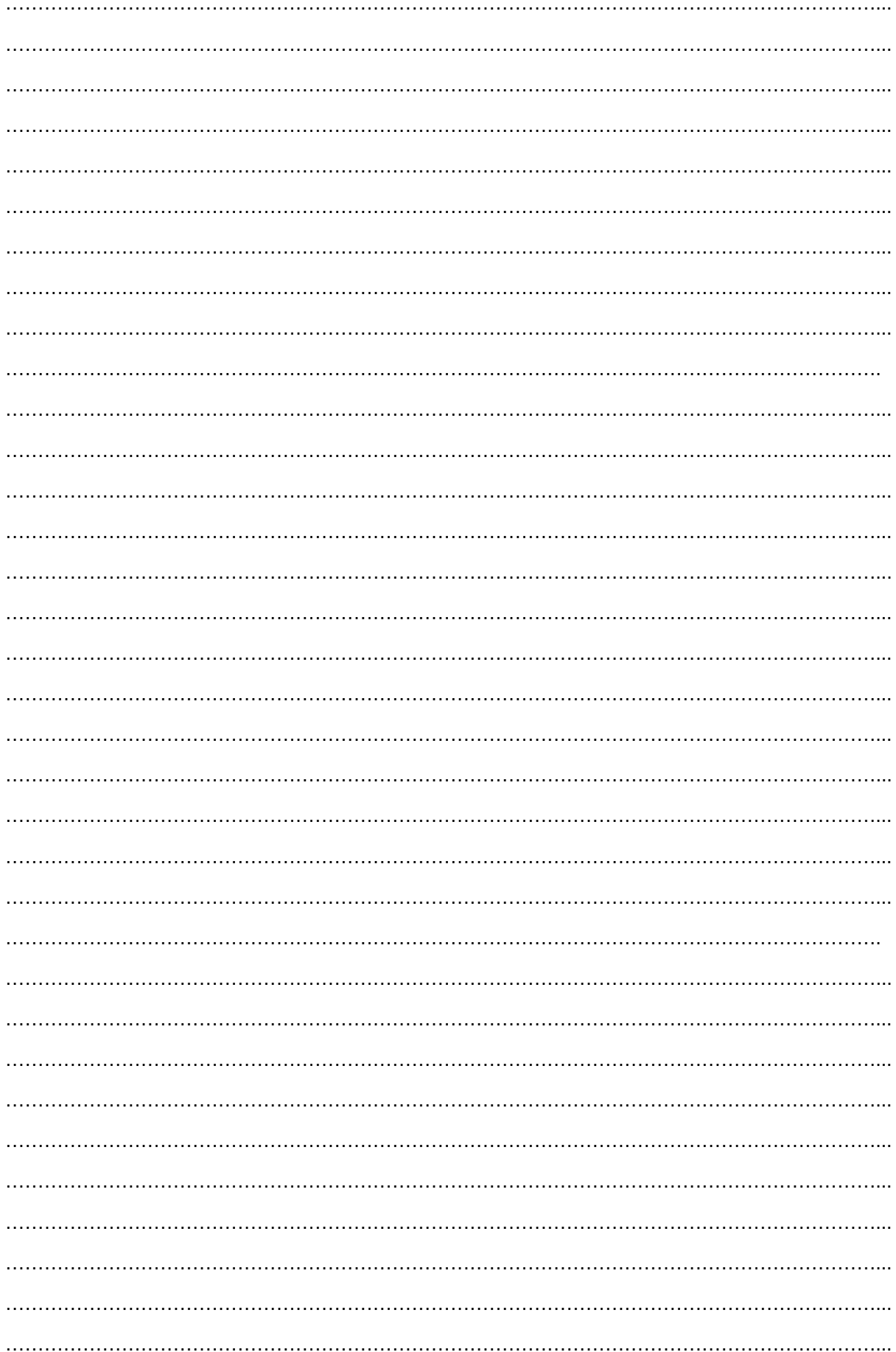
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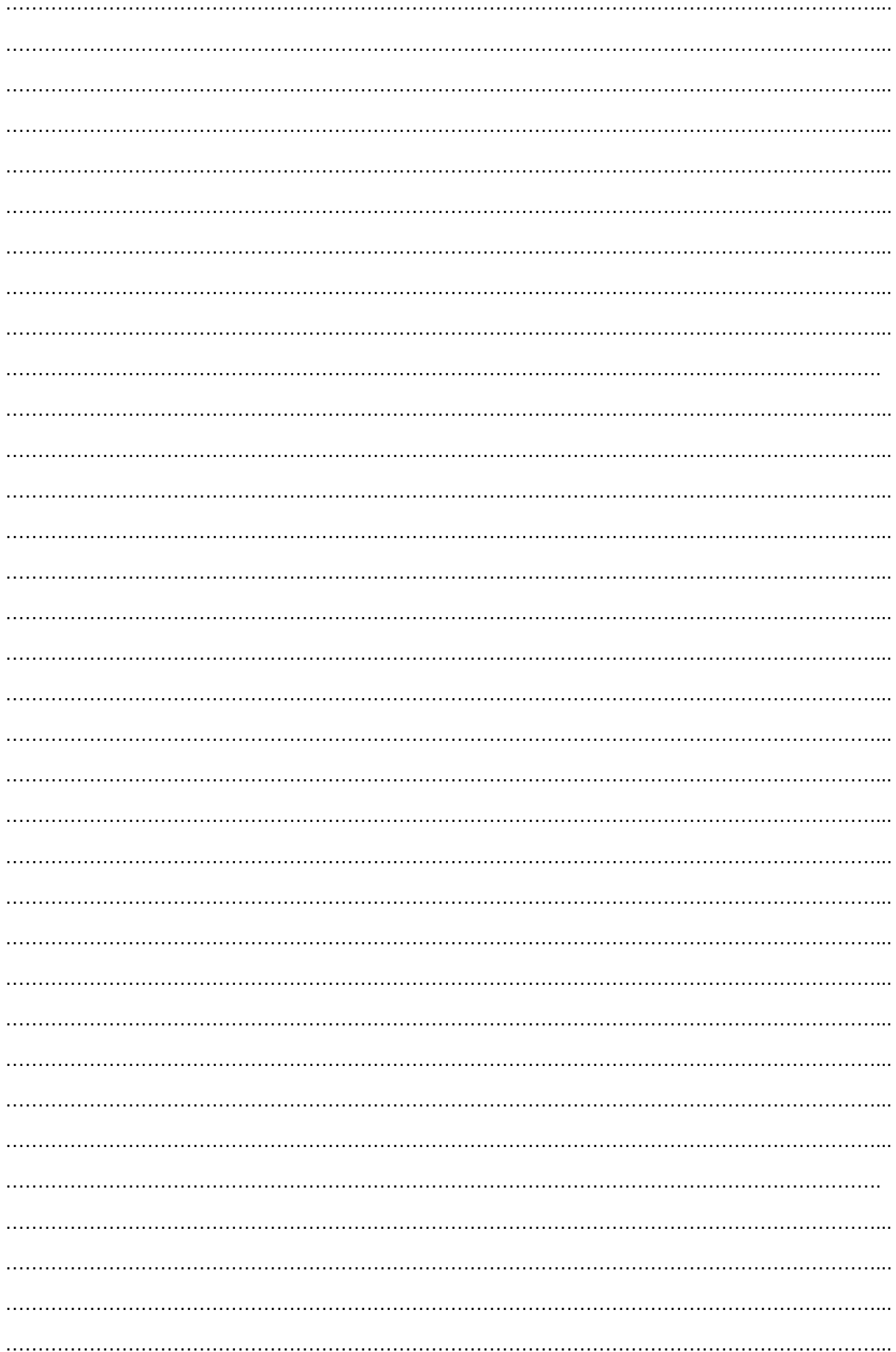
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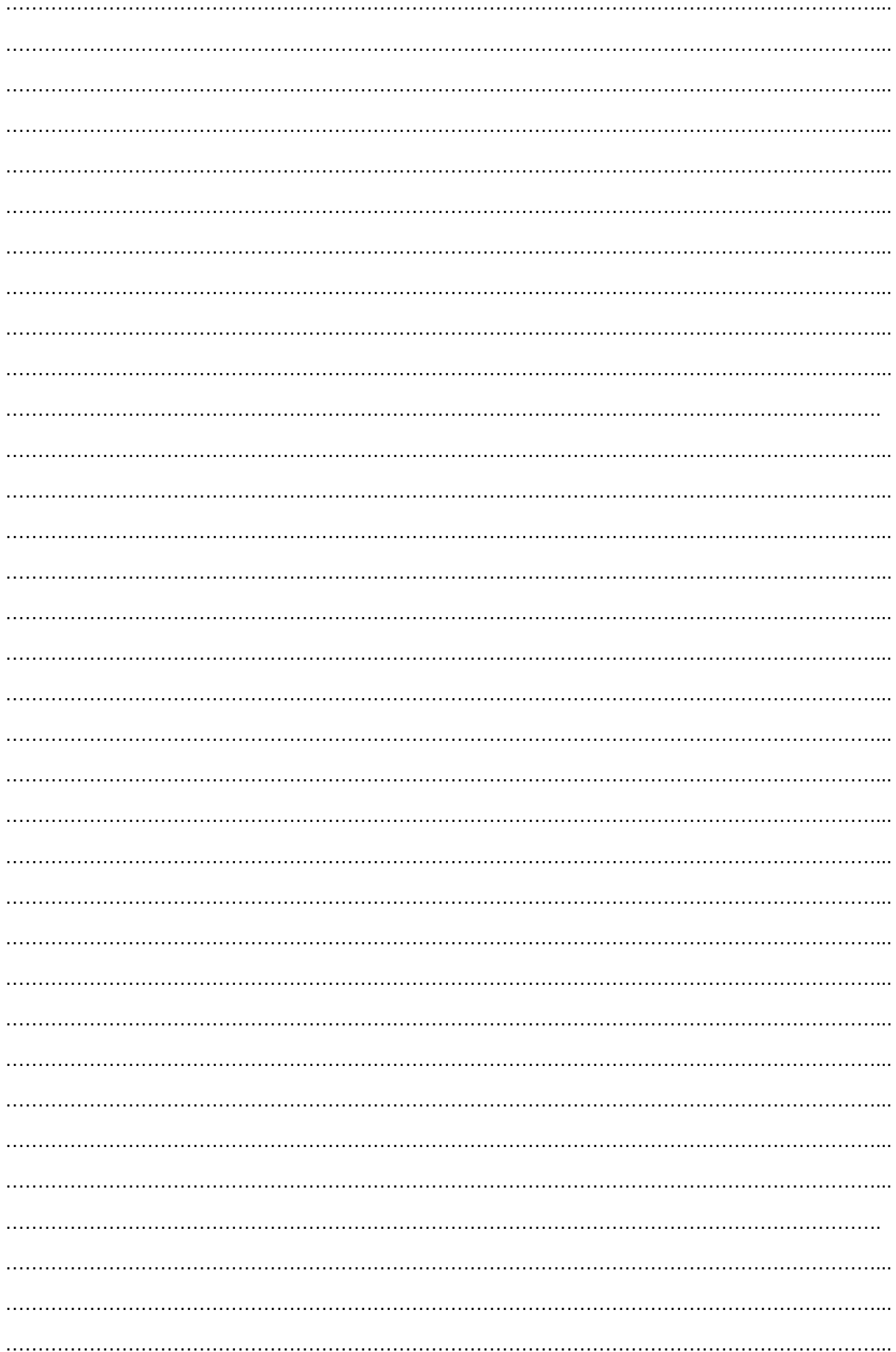
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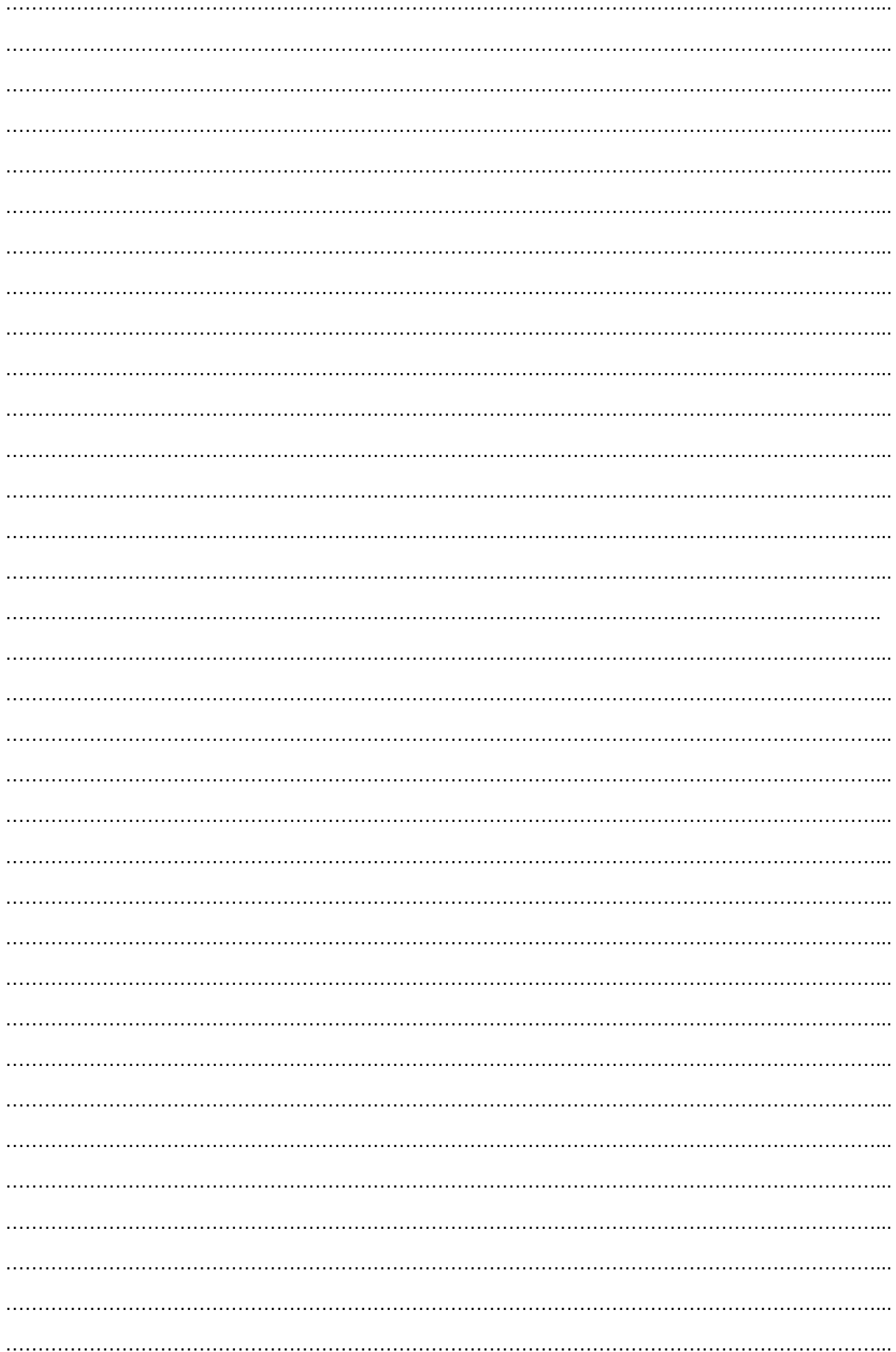
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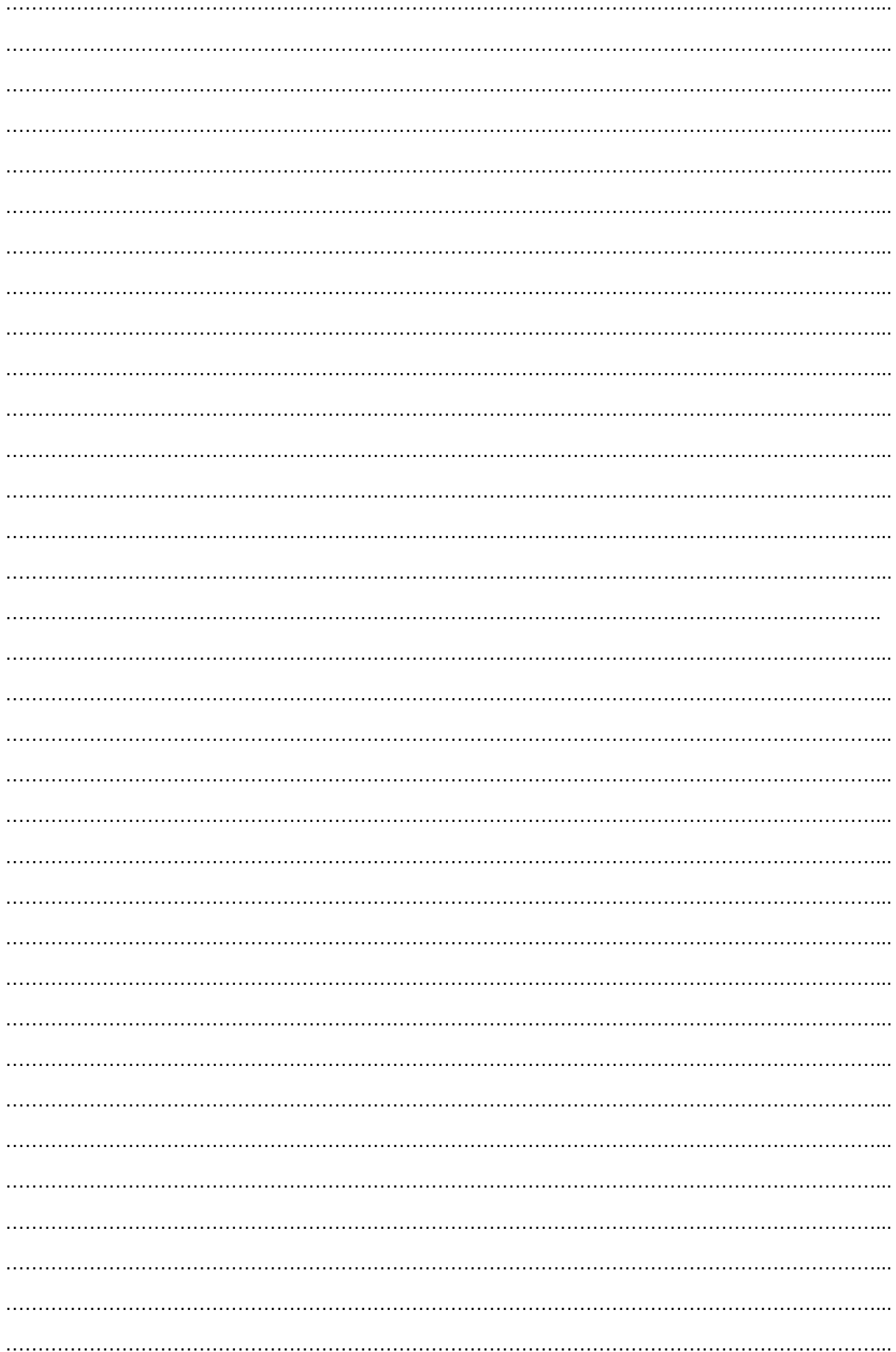
No.	Exercise	Page No.
1.	Determination of Most Profitable Level of Capital Use	
2.	Optimum Allocation of Limited Amount of Capital Among Different Enterprises	
3.	Analysis of Progress and Performance of Cooperatives Using Published Data	
4.	Analysis of Progress and Performance of Commercial Banks and RRB's Using Published Data	
5.	Visit to a Commercial Bank, Cooperative Bank/ Cooperative society to acquire first- hand knowledge of their management, schemes and procedures	
6.	Visit to a District Central Co-operative Bank (DCCB) to study its role, functions and procedures for availing loan- Fixation of Scale of Finance	
7.	Estimation of Credit Requirement of Farm Business – A Case Study	
8.	Preparation and Analysis of Balance Sheet and Cash Flow Statement – A Case study	
9.	Preparation and Analysis of Income Statement - A Case Study	
10	Exercise on Financial Ration Analysis, Appraisal of Loan Proposals- A Case study	
11	Estimation of Undiscounted Methods	
12.	Estimation of Discounted Methods	
13	Preparation of Repayment Plans	
14.	Preparation of Bankable Projects/Farm Credit Proposals and Appraisal	
15.	Techno- Economic Parameters for Preparation of Projects for Various Agricultural Products and its Value Added Products	
16.	Seminar on Various Topics	











Exercise No. 7

Objective: Estimation of Credit Requirement of Farm Business – A Case Study

Estimate the credit requirement of a groundnut farmer per ha using cost of cultivation approach

S. No.	Item	Physical unit	Value (Rs.)	Working capital
1.	Farm Buildings (Rs.)	1	1.75 lakh	-
2.	Tractor (Rs.)	1	15 lakh	-
3.	Land value (Rs. / ha)	1	22 lakh	-
4.	Depreciation rate of tractor @ 12.50%	10% x 15 lakh	= 15 lakh x	150,000
5.	Depreciation rate of farm buildings	7.5%	=1.75 lakh x 7.5%	13,125
6.	Seed	100 kg @ Rs.65/ kg	6500	6500
7.	Fertilizer	200 kg @ Rs.72/ kg	14,400	14,400
8.	Manures–purchased (Rs./ha)	5 tonnes @ Rs.4000 per tonne	20,000	20,000
9.	Plant protection chemicals (Rs./ha)	4 litres @ Rs.800 per litre	3200	3200
10.	Human labour (Rs./ha)	Rs.300/-day for 43 man-days	12,900	12,900
11.	Animal labour (Rs./ha)	4 bullock pair @ 1200 / pair	4800	4800
12.	Working capital			224,925
13.	Interest on working capital (7%)			15,745
14.	Total working capital (Cost A)			240,760
15.	Depreciation amount			163,125
16.	Credit requirement = Cost A – Depreciation			77,545

In this example, the credit requirement of a groundnut farmer comes out to be Rs.77,545 for per ha.

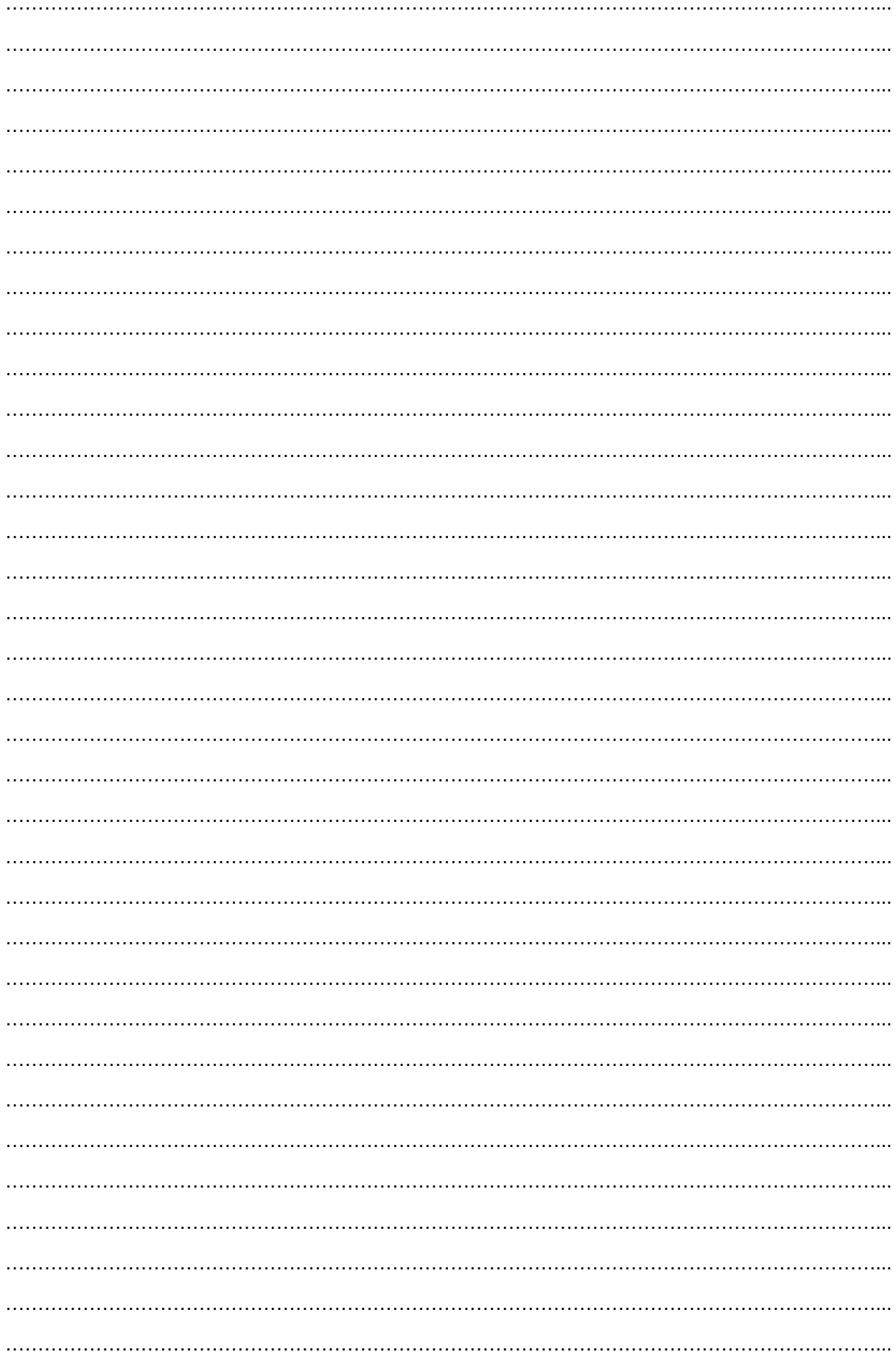
Proportionate cost approach: The credit requirement of a farmer can also be determined by the proportion of credit requirement of an i^{th} farmer for j^{th} crop (P_{ij}). As the proportion of credit requirement (P_i) varies upon the farm size (A_{ij}), the specification will be,

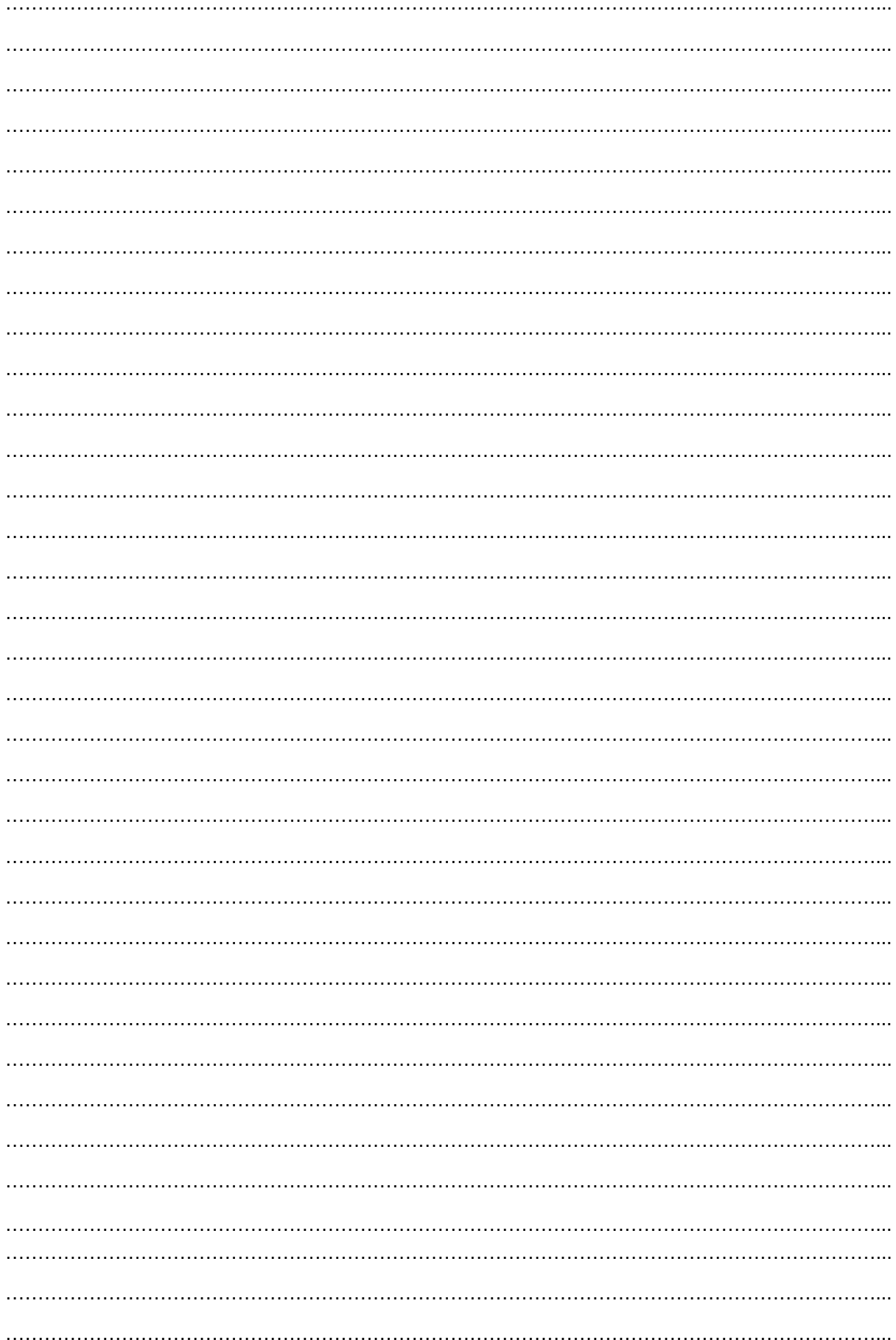
Credit requirement = Cost A X P_{ij} X A_{ij}

Type of farmer	Proportion (P_{ij})	Cost A (Rs.)	Area (A_{ij})	Credit Requirement estimation = Cost A x P_{ij} x A_{ij}	Credit Required (Rs.)
Small	55%	240,760	1	= 240,760*0.55*1	132418
Medium	45%	240,760	3	= 240,760*0.45*3	325026
Large	35%	240,760	5	= 240,760*0.35*5	421330

Exercise 1: Estimate the credit requirement of a 1 ha groundnut farmer with the given data using (i) Gross value approach. (ii) Cost of cultivation approach, and (iii) proportionate cost approach. Specify appropriate formula as required.

Sl. No.	Item	Rs./ha
1.	Farm Buildings (Rs.)	1.75 lakh
2.	Tractor (Rs.)	12.5 lakh
3.	Land value (Rs./ha)	22 lakh
4.	Depreciation rate of tractor	12.50%
5.	Depreciation rate of farm buildings	7.5%
6.	Seed (Rs./ha)	6500
7.	Fertilizer (Rs./ha)	7200
8.	Manures – purchase (Rs./ha)	1250 / quintals for 5 tonnes
9.	Plant protection chemicals (Rs./ha)	6800
10.	Human labour (Rs./ha)	Rs.300/- day for 43 man days
11.	Animal labour (Rs./ha)	4 bullock pair @ 1200/- pair

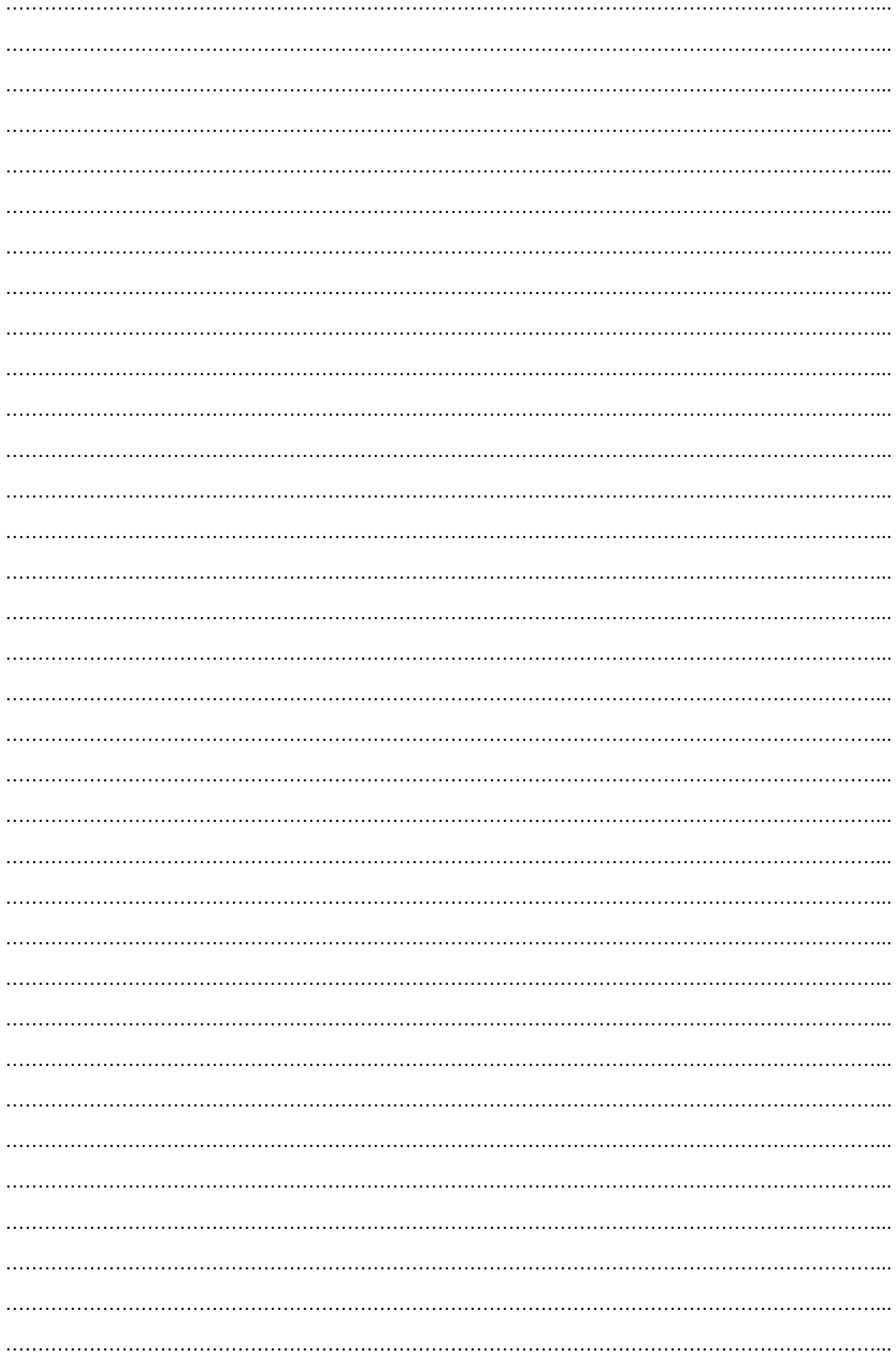


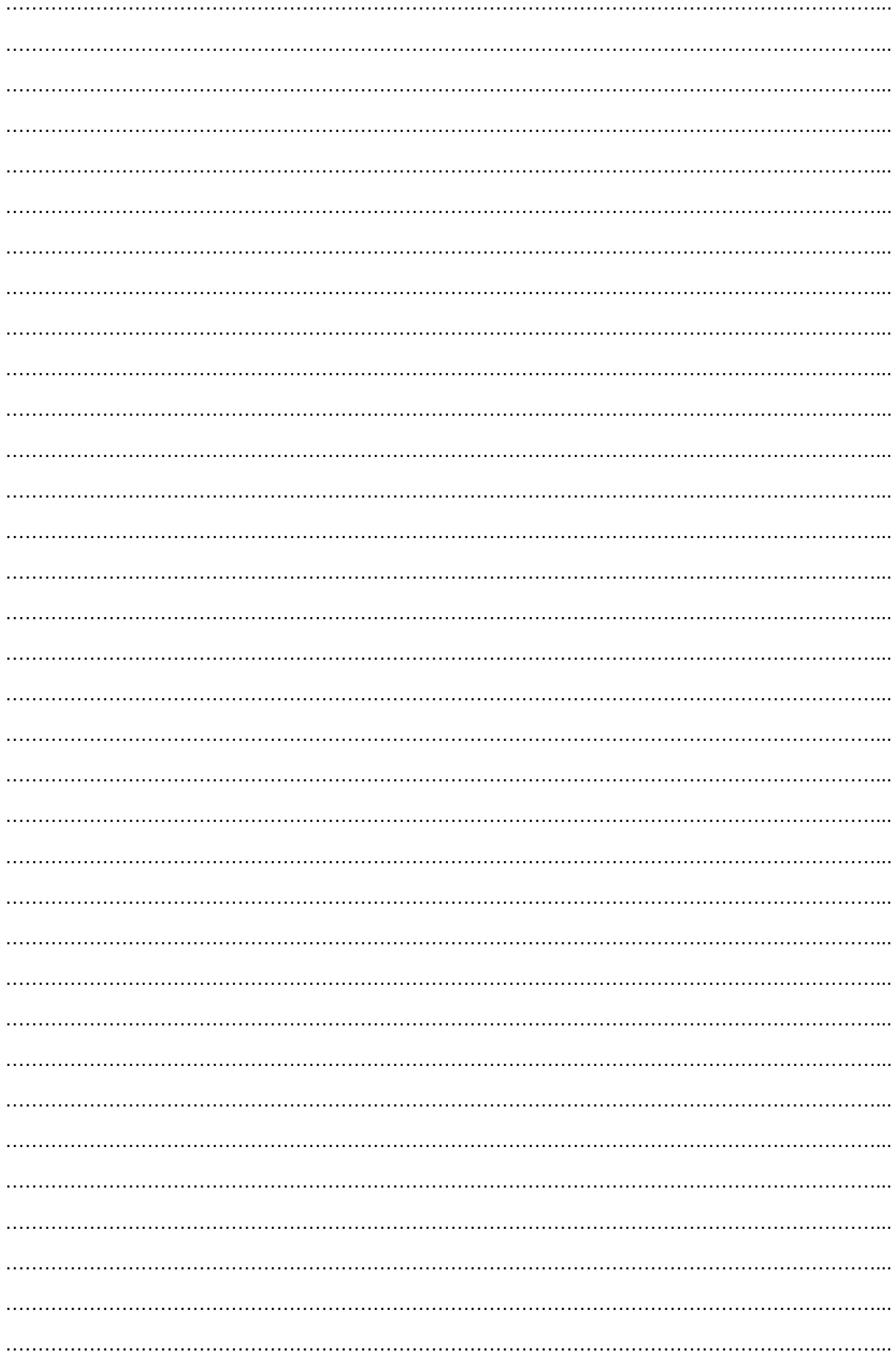


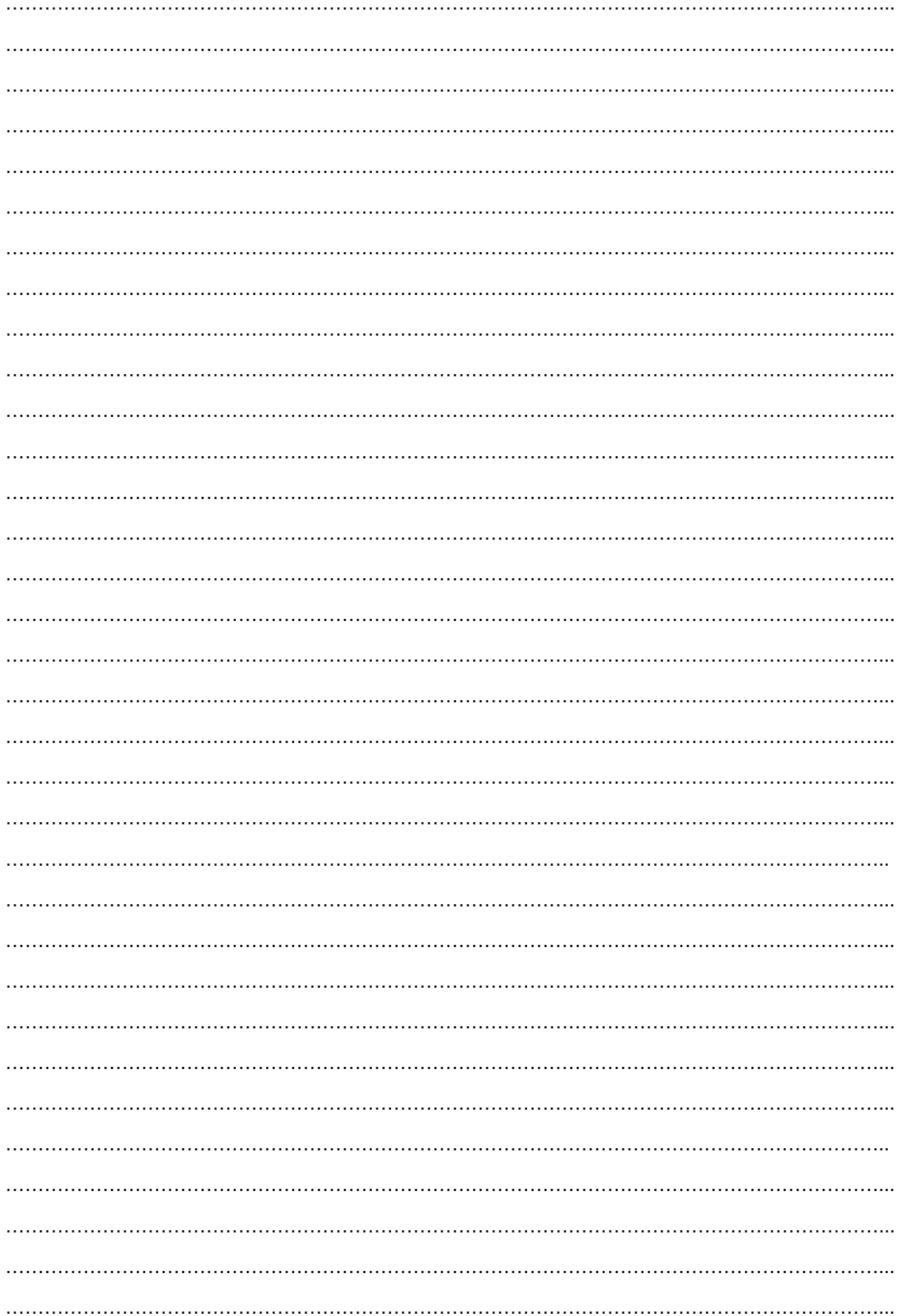
Exercise: 3: From the given table, work out the total cash income, total cash expenses, net cash farm income, total capital sales, net capital flow, total other income, total other expenditure, net other income less expenditure, net cash farm income, net capital expenditure, net income, net other income, cash surplus and closing bank balance for all the four quarter's and for the whole year.

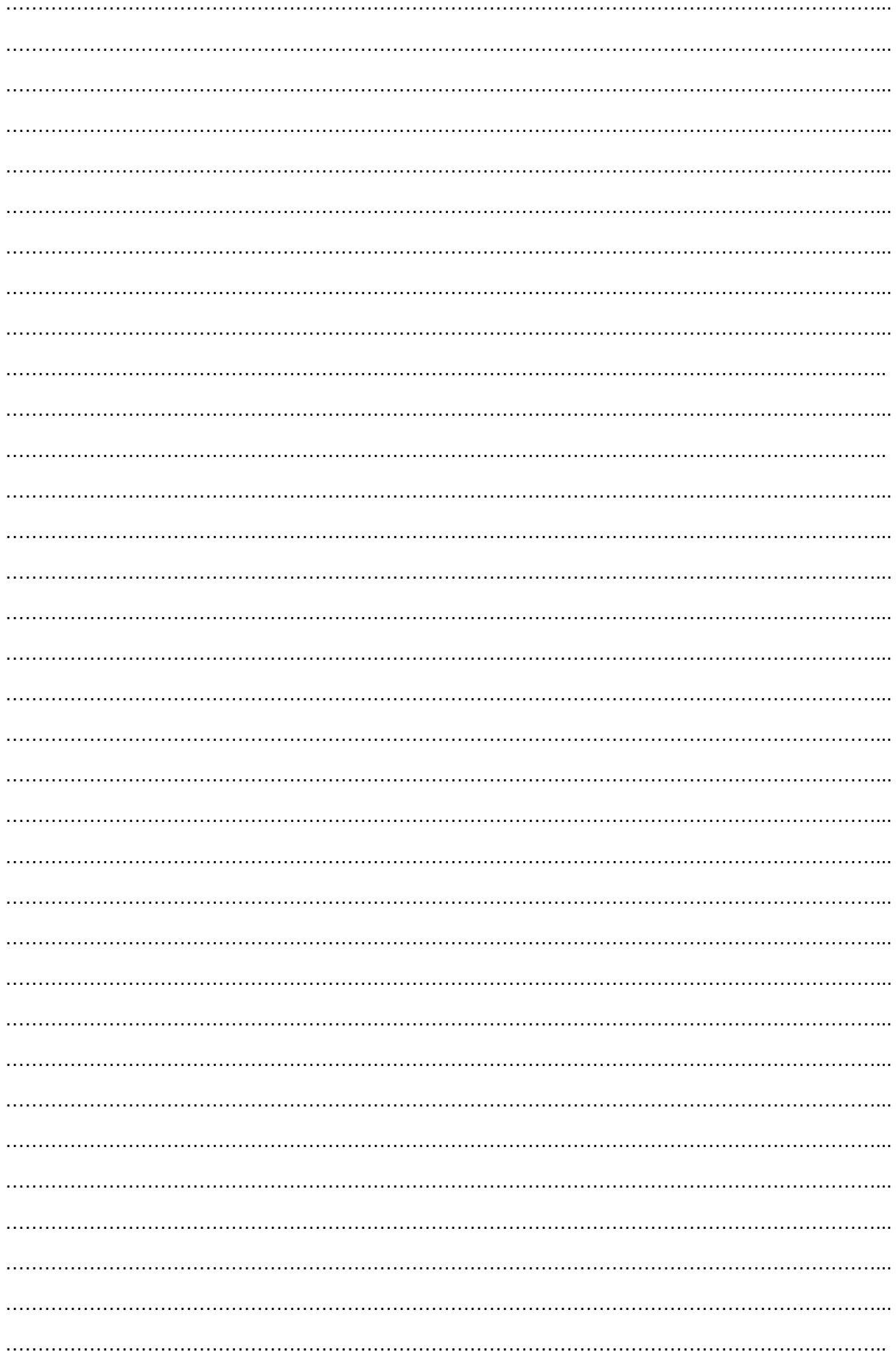
Quarterly Cash flow summary for the period from July, 2019 – June 31, 2020

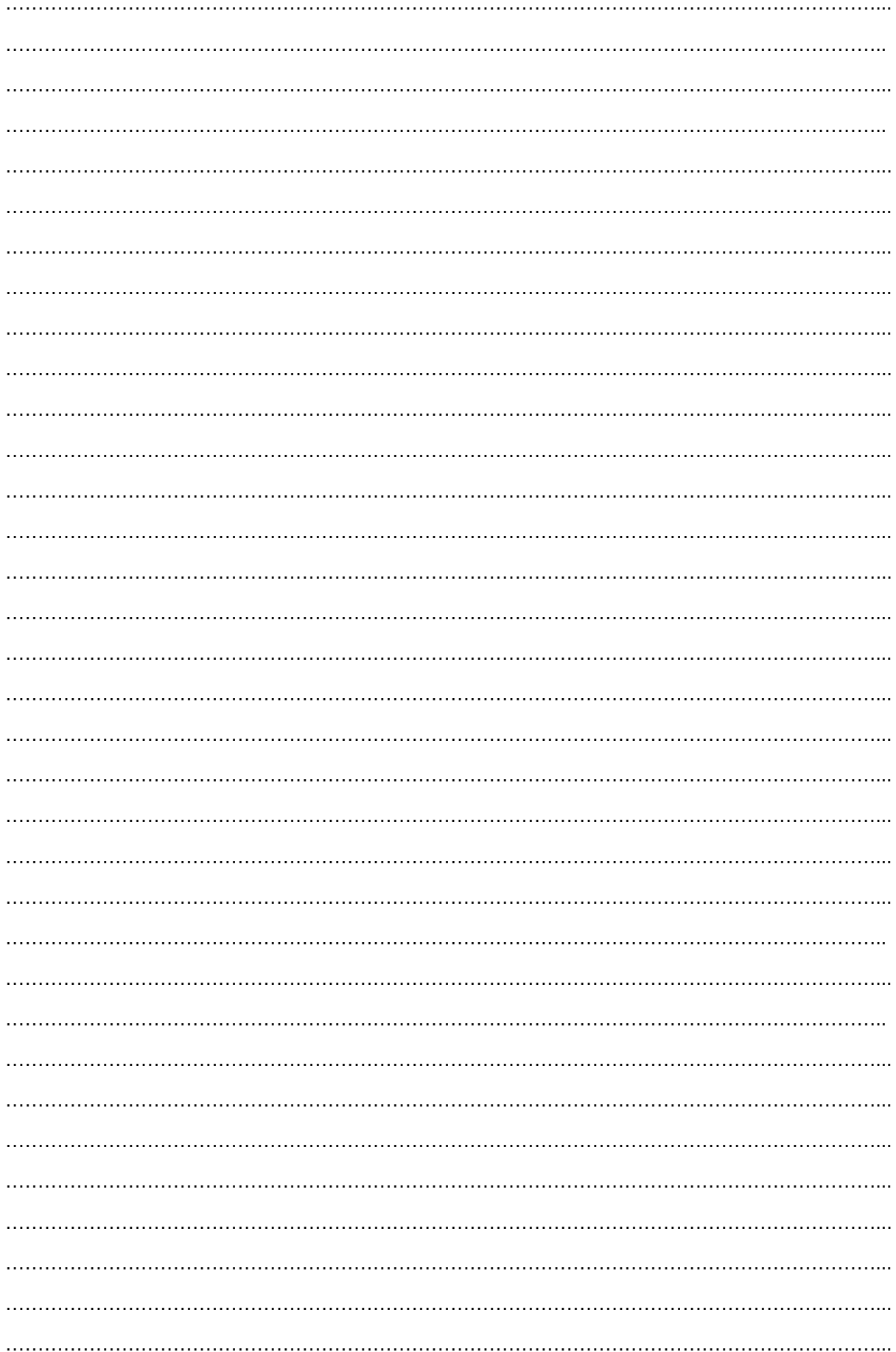
Sl. No.	Particulars	I Quarter July'16- Sep'16	II Quarter Oct'16 - Dec'16	III Quarter Jan2017- Mar2017	IV Quarter Apr2017- Jun2017	Yearly Total July 2016 - June 2017
Section 1: Net cash farm Income						
A.	Cash Income					
1.	Crops					
a.	Paddy	7,500	---	10,500	---	
b.	Groundnut	6,000	6,000	---	---	
c.	Sugarcane	2,500	3,000	20,000	---	
2.	Broiler sales	5,000	5,500	---	---	
3.	Milk sales	1,150	400	1,250	1,000	
4.	Total cash income					
B.	Cash expenses					
5.	Hired labour	800	300	900	1,000	
6.	Hired bullock labour	700	1,000	2,000	1,300	
7.	Machinery: Fuel and repairs	500	200	800	1,000	
8.	Fertilizers	90	30	180	200	
9.	Other crop expenses (seed plant protection measures)	550	50400	400		
10.	Livestock, machinery, veterinary and marketing expenses	250	250	150	350	
11.	Land rent	1,000	1,500	500		
12.	Interest on current debts, intermediate and long-term debts	800	800			
13.	Other miscellaneous expenses	200	450	50	50	
14.	Land revenue, cess, surcharge and water tax	--	500	---	---	
15.	Attached farm servant wages	500	100	200	200	
16.	Total cash expenses					
C.	Net cash farm income					
Section: II Net Capital Flow						
D.	Capital Sales					
17.	Milch animals	--	4,150	4,000	---	
18.	Machinery sales	---	150	---	---	
19.	Total capital sales					
E.	Capital Expenditure					
20.	Improvement repair	1,000	3,200	---	--	4,200
21.	Capital expenditure					
F.	Net capital flow (19-21)					
Section: III Net other income flow						
G.	Other income					
22.	Off farm income	---	1,000	500	--	
22.a	Non-Farm income	5,000	5,000	5,000	5,000	
23.	Total other income	---			---	
H.	Other expenditure					









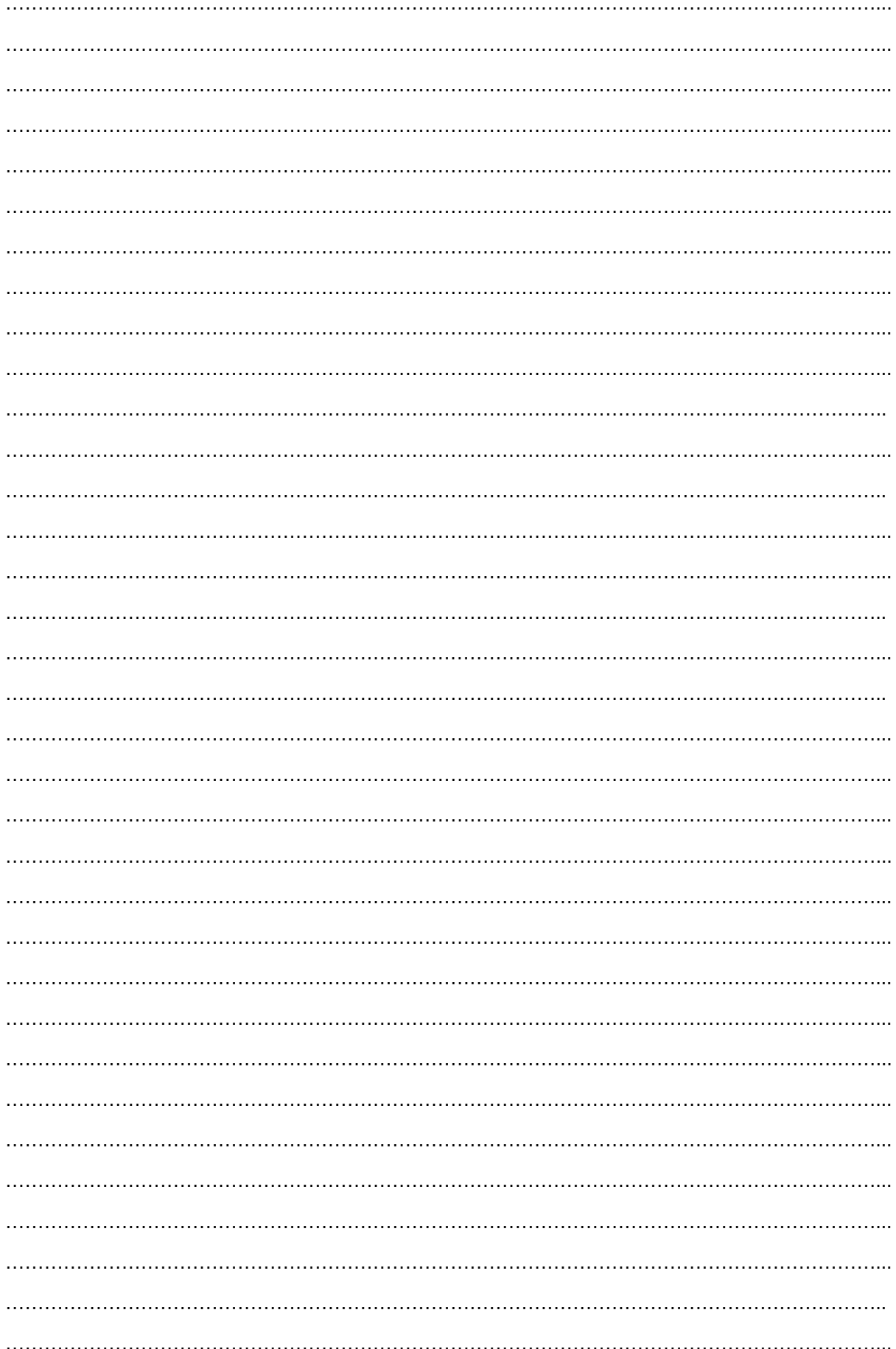


Exercise No. 13

Objective: Preparation of Repayment Plans

Example of loan amortization: equal total payment plan.				
Year	Loan amount Rs.10,000, annual rate 12% 8 annual payments			
	Annual payment	Principal payment	Interest	Unpaid balance
Rs.10,000.00				
1	2,013.03	813.03	1,200.00	9,186.87
2	2,013.03	910.59	1,102.44	8,276.38
3	2,013.03	1,019.86	993.17	7,256.52
4	2,013.03	1,142.25	870.78	6,114.27
5	2,013.03	1,279.32	733.71	4,834.95
6	2,013.03	1,432.83	580.20	3,402.12
7	2,013.03	1,604.77	408.26	1,797.35
8	2,013.03	1,797.35	215.68	0
Total	Rs.16,104.24	Rs.10,000.00	Rs.6,104.24	0

Example of loan amortization: equal principal plan.				
Year	Loan amount Rs.10,000, annual rate 12% 8 annual payments			
	Annual payment	Principal payment	Interest	Unpaid balance
Rs.10,000.00				
1	2,450.00	1,250.00	1,200.00	8,750.00
2	2,300.00	1,250.00	1,050.00	7,500.00
3	2,150.00	1,250.00	900.00	6,250.00
4	2,000.00	1,250.00	750.00	5,000.00
5	1,850.00	1,250.00	600.00	3,750.00
6	1,700.00	1,250.00	450.00	2,500.00
7	1,550.00	1,250.00	300.00	1,250.00
8	1,400.00	1,250.00	150.00	0
Total	Rs.15,400.00	Rs.10,000.00	Rs.5,400.00	0



Exercise No. 14

Objective: Preparation of bankable projects/ farm Credit proposals and appraisal

Economics of scheme with 10 bee hives: Unit cost, average cash flow and repayment schedule has been worked. The economics have been worked out for a 10 bee boxes model. The economics relates to *Apis mellifera* species of honey bee. The scheme has been found economically viable and details of the same is given below.

Economics of 10 bee hives model

I. Unit Cost

A	Fixed Cost	Qty	Amount (Rs)
1	Cost of 10 Boxes with Super Queen @ Rs. 2500	10	25000
2	Cost of Frames @ Rs. 250	80	20000
3	Gloves, nets, drums, tray, knife, honey machine & other equipments		5000
	Sub- Total		50000
B	Variable Cost		
1	Sugar @ 2 kg per hives and @ Rs 35/ kg		700
2	Medicine @ Rs. 30 per hive		300
3	Cloth to cover boxes (@2 m per box and Rs. 25 per m)		500
4	Transport for migration		6000
5	Honorarium to master bee keeper		5000
6	Other		1000
	Sub Total		13500
	Grand Total		63500

Unit cost (A+B)/ Total Cost

Rs 63,500.00 Margin 10%

Rs 6400.00

Bank Loan

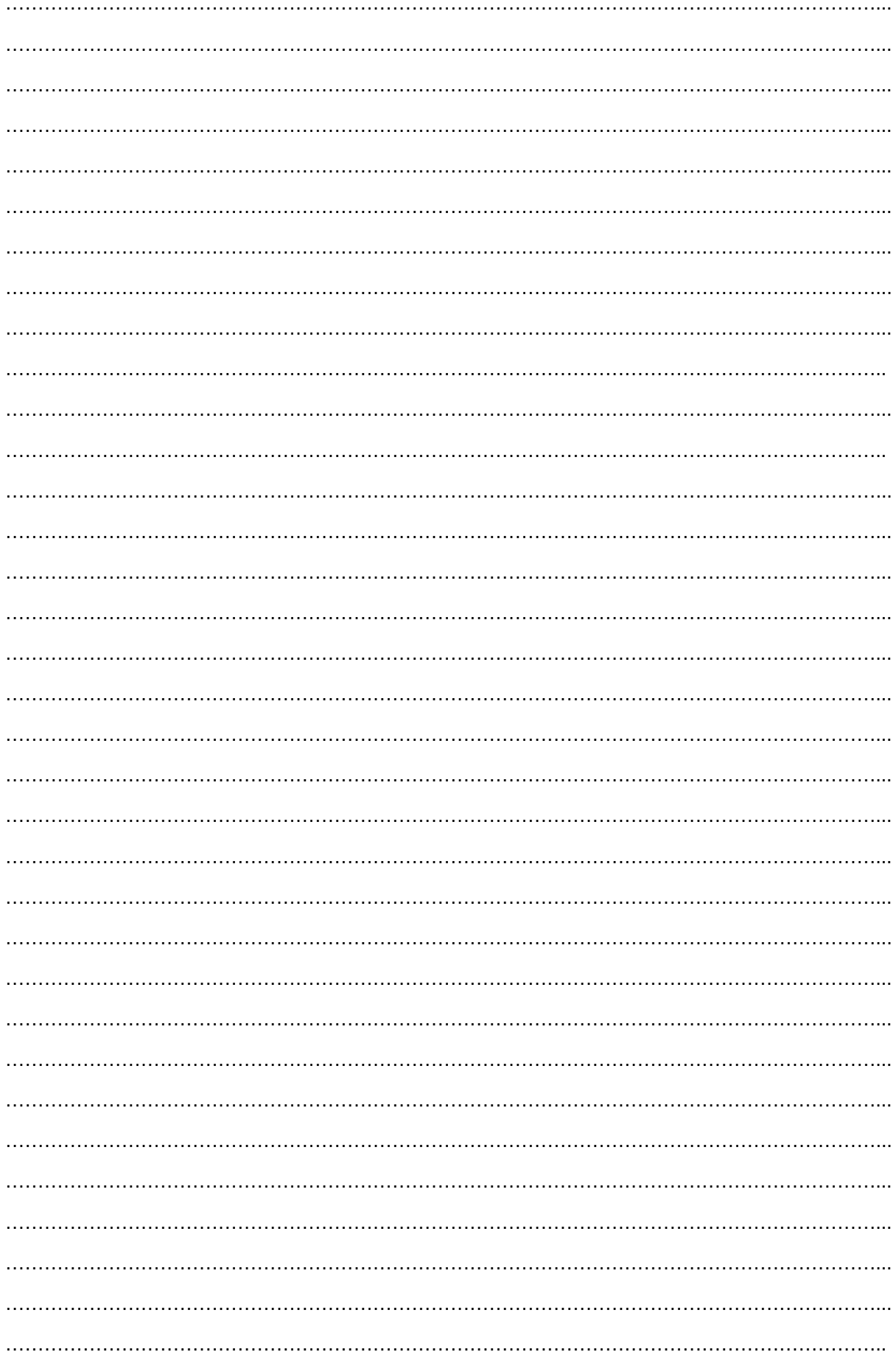
Rs 57,100.00

Cash Flow Statement

Sl. No	Particulars	I Year	II Year	III Year	IV Year	V Year	VI Year
1	Honey collection per hive (kg)	10	30	35	40	40	40
2	Wax produced per hive (kg)	0.3	0.3	0.3	0.3	0.3	0.3
3	Income from sale of honey @ Rs. 100 per kg from 10 hives	10000	30000	35000	40000	40000	40000
4	Wax @ 400 per kg from 10 hives	12000	1200	1200	1200	1200	1200
5	Sale of extra colony	0	5000	5000	5000	5000	5000
6	Gross Income	11200	36200	41200	46200	46200	46200
7	Recurring expenses (first year capitalized)	-13500	- 13500	13500	-13500	13500	-13500
8	Gross profit	-2300	22700	27700	32700	32700	32700
9	Depreciation (@ 10% SLM)	8333	8333	8333	8333	8333	8333
10	Interest @12%	0	13704	6612	5532	3852	1992
11	Net Income	-10633	663	12755	18835	20515	22375

Repayment Schedule:

Year	Loan O/S at beginning of year	Interest @ 12%	Repayment of interest	Repayment of principal	Total Repayment	Gross profit	Loan O/S at end of year
1	57100	0	0	0	0	-2300	57100
2	57100	13704	13704	2000	15704	22700	55100
3	55100	6612	6612	9000	15612	27700	46100
4	46100	5532	5532	14000	19532	32700	32100



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