PARTNERSHIP BUSINESS

Complete SSC CGL Mathematics Notes

Comprehensive Guide with Formulas & Examples • Created by GovtExamPrep

1. BASIC CONCEPTS OF PARTNERSHIP

Definition and Types

Partnership: An association of two or more persons who pool their resources (capital, skills, time) to carry on a business and share its profits/losses in an agreed ratio.

Types of Partnership:
• **Simple Partnership:** Capital invested for same time period
• **Compound Partnership:** Capital invested for different time periods
• **Active Partner:** Manages the business
• **Sleeping Partner:** Only invests capital

Element	Description	Importance
Capital	Money invested by partners	Determines investment ratio
Time Period	Duration of investment	Affects profit share calculation
Profit Ratio	Agreed sharing ratio	Final profit distribution
Salary/Commission	Payment to working partners	Deducted before profit sharing

Fundamental Formulas

Basic Profit Sharing Formula:
$\text{Profit Share} \propto (\text{Investment} \times \text{Time})$

If A invests ₹X for T_1 months and B invests ₹Y for T_2 months:
$\text{Profit Ratio} = (X \times T_1) : (Y \times T_2)$

For multiple partners:
$\text{Profit Ratio} = (\text{Capital}_1 \times \text{Time}_1) : (\text{Capital}_2 \times \text{Time}_2) : \ldots : (\text{Capital}_n \times \text{Time}_n)$

Individual Profit Share:

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Partner's Share = (Individual Ratio / Total Ratio) ×
Total Profit
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2. SIMPLE PARTNERSHIP PROBLEMS

Equal Time Period

Example 1: A and B invest ₹6000 and ₹8000 respectively in a business for 1 year. If annual profit is ₹2800, find their shares.

Solution:

- Investment ratio = 6000 : 8000 = 3 : 4
- Since time is same (1 year), profit ratio = investment ratio = 3 : 4
- Total ratio parts = 3 + 4 = 7
- A's share = (3/7) × 2800 = ₹1200
- B's share = (4/7) × 2800 = ₹1600

Example 2: Three partners invest ₹20000, ₹30000, and ₹40000 respectively. Annual profit ₹45000. Find each partner's share.

Solution:

- Investment ratio = 20000 : 30000 : 40000 = 2 : 3 : 4
- Total ratio parts = 2 + 3 + 4 = 9
- First partner: (2/9) × 45000 = ₹10000
- Second partner: (3/9) × 45000 = ₹15000
- Third partner: (4/9) × 45000 = ₹20000

Different Time Periods

Example: A invests ₹5000 for 6 months, B invests ₹6000 for 4 months, C invests ₹8000 for 3 months. Find profit ratio.

Solution:

- A: 5000 × 6 = 30000
- B: 6000 × 4 = 24000
- C: 8000 × 3 = 24000
- Profit ratio = 30000 : 24000 : 24000
- Simplify by dividing by 6000 = 5 : 4 : 4

3. COMPOUND PARTNERSHIP - ADVANCED SCENARIOS

Partners Joining/Leaving

Example: A starts business with ₹40000. After 3 months, B joins with ₹60000. After 6 more months, C joins with ₹80000. At year end, profit ₹30000. Find shares.

Solution:

- A: 40000 × 12 = 480000
- B: 60000 × 9 = 540000
- C: 80000 × 3 = 240000
- Ratio = 480000 : 540000 : 240000
- Divide by 60000 = 8 : 9 : 4
- Total parts = 8 + 9 + 4 = 21
- A's share = (8/21) × 30000 = ₹11428.57
- B's share = (9/21) × 30000 = ₹12857.14
- C's share = (4/21) × 30000 = ₹5714.29

Capital Withdrawal/Addition

Example: A and B start with ₹50000 and ₹30000. After 4 months, A withdraws ₹20000 and B adds ₹20000. Annual profit ₹39200. Find shares.

Solution:

- A: First 4 months = 50000 × 4 = 200000
- Next 8 months = 30000 × 8 = 240000
- Total A = 200000 + 240000 = 440000
- B: First 4 months = 30000 × 4 = 120000
- Next 8 months = 50000 × 8 = 400000
- Total B = 120000 + 400000 = 520000
- Ratio = 440000 : 520000 = 11 : 13
- Total parts = 11 + 13 = 24
- A's share = (11/24) × 39200 = ₹17966.67
- B's share = (13/24) × 39200 = ₹21233.33

4. SALARY AND COMMISSION IN PARTNERSHIP

Working Partner Compensation

Important Rules:
• Salary/commission to working partners is deducted before profit distribution
• It's treated as business expense
• Remaining profit is distributed in profit-sharing ratio

Example: A and B invest ₹40000 and ₹60000. A is working partner and gets 10% commission. Annual profit ₹30000 before commission. Find final shares.

Solution:

- A's commission = 10% of 30000 = ₹3000
- Remaining profit = 30000 - 3000 = ₹27000
- Investment ratio = 40000 : 60000 = 2 : 3
- A's profit share = (2/5) × 27000 = ₹10800
- B's profit share = (3/5) × 27000 = ₹16200
- A's total = Commission + Profit share = 3000 + 10800 = ₹13800
- B's total = ₹16200

Monthly Salary

Example: A and B invest ₹50000 each. A gets ₹1000 monthly salary. Annual profit ₹40000. Find shares.

Solution:

- A's annual salary = 1000 × 12 = ₹12000
- Remaining profit = 40000 - 12000 = ₹28000
- Since investments equal, remaining profit shared equally
- A's profit share = 28000/2 = ₹14000
- B's profit share = ₹14000
- A's total = Salary + Profit share = 12000 + 14000 = ₹26000
- B's total = ₹14000

5. INTEREST ON CAPITAL

Capital Interest Calculation

Interest on Capital:
• Sometimes partners receive interest on their capital
• Treated as business expense
• Deducted before profit distribution
• Calculated for actual period of investment

Example: A and B invest ₹60000 and ₹40000. Interest allowed @10% p.a. Annual profit ₹25000. Find shares.

Solution:

- A's interest = 10% of 60000 = ₹6000
- B's interest = 10% of 40000 = ₹4000
- Total interest = 6000 + 4000 = ₹10000
- Remaining profit = 25000 - 10000 = ₹15000
- Investment ratio = 60000 : 40000 = 3 : 2
- A's profit share = (3/5) × 15000 = ₹9000
- B's profit share = (2/5) × 15000 = ₹6000
- A's total = Interest + Profit share = 6000 + 9000 = ₹15000
- B's total = Interest + Profit share = 4000 + 6000 = ₹10000

6. SSC CGL PRACTICE PROBLEMS

Previous Year Question Types

Problem 1: A and B invest in ratio 3:2. After 6 months, A withdraws half capital. If annual profit ₹20000, find B's share.

Solution:

- Let A's capital = 3x, B's capital = 2x
- A: First 6 months = 3x × 6 = 18x
- Next 6 months = 1.5x × 6 = 9x
- Total A = 18x + 9x = 27x
- B: 2x × 12 = 24x
- Ratio = 27x : 24x = 9:8
- B's share = (8/17) × 20000 = ₹9411.76

Problem 2: Three partners A, B, C invest. A's capital = B's capital for 8 months, B's capital = C's capital for 10 months. Profit ₹3780. Find A's share.

Solution:

- Let C's capital = x
- B's capital = x (for 10 months)
- A's capital = x (for 8 months)
- Ratio = (x×8) : (x×10) : (x×12) = 8:10:12 = 4:5:6
- Total parts = 4+5+6 = 15
- A's share = (4/15) × 3780 = ₹1008

Problem 3: A and B start with ₹8000 and ₹6000. After 6 months, A adds ₹2000 and B withdraws ₹2000. Annual profit ₹30000. Find A's share.

Solution:

- A: First 6 months = 8000 × 6 = 48000
- Next 6 months = 10000 × 6 = 60000
- Total A = 48000 + 60000 = 108000
- B: First 6 months = 6000 × 6 = 36000

- Next 6 months = 4000 × 6 = 24000
- Total B = 36000 + 24000 = 60000
- Ratio = 108000 : 60000 = 9:5
- Total parts = 9+5 = 14
- A's share = (9/14) × 30000 = ₹19285.71

7. QUICK FORMULAS & SHORTCUTS

Memory Tips and Tricks

Golden Rule: Profit Share ∝ Investment × Time
Always convert time to same units (months recommended)

Quick Calculation Method:
- Calculate (Capital × Time) for each partner
- Find ratio of these products
- Simplify the ratio
- Distribute profit according to simplified ratio

Special Cases Formulas:
When investments in ratio and time same:
`Profit ratio = Investment ratio`

When investments same and time different:
`Profit ratio = Time ratio`

When partner joins later:
`Calculate from joining date only`

When partner withdraws capital:
`Calculate separately for each period`

Common Ratio Patterns

Situation	Profit Ratio Pattern	Example
Equal investment, equal time	1:1:1...	₹50000 each for 12 months
Investment ratio a:b, equal time	a:b	₹60000:₹40000 = 3:2
Equal investment, time ratio m:n	m:n	12 months:8 months = 3:2
Both different	(investment×time) ratio	₹50000×6 : ₹60000×4 = 5:4

8. SSC CGL PREPARATION STRATEGY

Expected Marks Distribution

Topic	Frequency	Difficulty	Marks Weightage
Simple Partnership	High	Easy	1-2 marks
Compound Partnership	High	Medium	2-3 marks
Salary/Commission	Medium	Medium	1-2 marks
Interest on Capital	Low	Hard	1 mark
Mixed Problems	High	Hard	2-3 marks

15-Day Intensive Study Plan

Week 1: Foundation Building
• Days 1-3: Basic concepts and simple partnership
• Days 4-5: Compound partnership - joining/leaving
• Days 6-7: Capital withdrawal/addition problems

Week 2: Advanced Topics & Practice
• Days 8-9: Salary and commission problems
• Days 10-11: Interest on capital
• Days 12-13: Mixed and complex problems
• Days 14-15: Previous year papers and revision

Daily Practice Routine:
• 10 basic partnership problems
• 5 compound partnership problems
• 3 salary/commission problems
• Learn all formulas and shortcuts

Exam Tips

Time Management:
• Simple partnership: 1-2 minutes
• Compound partnership: 2-3 minutes

- Complex problems: 3-4 minutes
- Use approximation when options are wide apart

Common Mistakes to Avoid:

- Not converting time to same units
- Forgetting to deduct salary/commission
- Missing capital changes during year
- Calculation errors in ratio simplification

Partnership Business - SSC CGL Master Notes

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