

Integrated Operations Management 2013-14 – Exercises Solutions

CASINO MONEY-HANDLING PROCESSES

When solving some this case some initial assumptions have to be made which may determine the results of the proposed solution.

1)	61,25 hours
2)	95,2 hours
3)	87,6 hours

FACILITY LOCATION EXERCISES

1 – RAINBOW

a)	$x = 0,9225 ; y = 3,3675$
b)	Loc 1 = 8,288; Loc 2 = 7,733

2 – SUPERBUY

a)	$x = 1,353 ; y = 2,547$
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3 – C&C

a)	$x = 0,968 ; y = 6,281$
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4 – NTL

a)	$x = 8,95 ; y = 8,55$
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5 – AvLog

a)	Loc A = 3,57; Loc 2 = 3,76
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THEORY OF CONSTRAINTS EXERCISES

1 – PRIME

a)	6665 units per week
b)	A – 38,93h; B to G – 40h + plus extra time (e.g B – 0,83; C – 7,15, etc) If outsourcing is used Second may provide 2145 units

2 – GOLDEN

a)	Bottleneck – G; daily capacity = 1600 litres
b)	395 l

3 - DESINFECTA

a)	3910 litres / week
b)	Time buffer – 325 litres
c)	Extra daily time (hours): A – 1,2; B – 0,40, etc

4 - NEWEST

a)	400 units
b)	Time buffer – 232 units

5 - OLIMPUS

a)	1200 units per shift
b)	625 parts
c)	Production may increase 254 units per day (2 shifts)

LAYOUT EXERCISES

1 – TOTAL METAL

a)	Cycle Time = 60 sec; Minimum number of workstations = 7 Efficiency for 9 workstations = 74,1 %; Efficiency for 7 workstations = 95,2 %;
b)	(10 working hours per day) Layout with 7 workstations – 620 units per day Layout with 9 workstations – 766 units per day

2 – VMA

a)	Current layout – 102 points Better layout - 110 points
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3 – MYCOS

a)	Cycle time – 16 min; Workstations – 7 (minimum)
b)	Efficiency for 8 workstations – 80,5%

4 – GADGET

a)	2.240.000€
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5 – PRODUCT

a)	Transport cost with current layout – 5.712€ (one way) Transport cost with alternative layout – 4.932 € (one way)
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6 – LC AUTO

a)	Efficiency with 5 workstations – 88%
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7 – LUDO

a)	160 units
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8 – TEXIS

a)	Efficiency with 8 workstations – 76,6% Efficiency with 7 workstations – 87,5%
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AGGREGATED PLANNING

1 –

a)	Não
b)	T1 – 1 trainee; T2 – 3 trainees; T3 – 3 trainees; T2 – 1 trainee;
c)	Total yearly cost: 455.100€

2 –

a)	Permanent sales persons – 8 T1 – 0 trainees; T2 – 3 trainees; T3 – 4 trainees; T2 – 1 trainee;
b)	Total yearly cost : 396.000€

3 – SOFINTAS

a)	Permanent sales persons : 6
b)	Extra time(h) : T1 – 165; T2 – 620; T3 – 161; T2 – 317;
c)	

4 – ASSOCIATED CONSULTANTS

a)	permanent workers : 4; temporary workers : T1 – 4; T2 – 0; T3 – 6; T4 – 2;
b)	Permanent workers extra time (h) : T1 – 0 h; T2 – 0; T3 – 8,2; T4 – 0;

5 –

a)	Average inventory level (units) : M1 – 300; M2 – 490; M3 – 320; M4 – 80; M5 – 160; M6 – 100
b)	592.250 € for 6 months

6 – SEMSTOCK

a)	13
b)	Average inventory level (units) : T1 – 0; T2 – 72; T3 – 72; T4 – 22;

7 – TECNITEAM

	Total Cost = 4.160.000€ for 4 trimesters
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INVENTORY PLANNING AND CONTROL EXERCISES

1 – GOLIAS

a)	T= 3015 units
b)	Q= 0 units
c)	Q= 0 units
d)	Q= 2780 units
e)	R= 1326 units
f)	EOQ= 750

2 – COLOMBINA / SOFT SOFA

	Initial situation (P Method) – 2.187.909,5€ Proposal (Q Method) – 2.057.547,4€ Savings - 130.362,03€
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3 – PINGUS

a)	Q = 1122 bottles R = 1164 bottles TBO = 5,61 days
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4 – NATURA

a)	Calcium : Q = 390 units Iron: Q = 222 units
b)	The company should not consider the proposal.

5 – VALENTINO

a)	L001 = B001 = 1807 books L002 = B002 = 1748 books C005 = 0 CDs
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6 – RUSSEL

a)	669 boxes
b)	The director is right.

JUST IN TIME EXERCISES

1 –

	12 containers
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2 – TULSA MOTOS

a)	210 units
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3 – WINNER

a)	8 containers
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4 – INGRID

a)	FIX: 3 containers; GEAR: 3 containers;
c)	FIX: 90 units; GEAR: 45 units.