BA 353: Individual Exam 2 Key

* This is an individual exam. All work must be your own, no cheating.
* You may reference your own earlier assignments and spreadsheets.
* Be sure to double-check your work and good luck!

**Versions 1 and 5 answers in red.**

**Versions 2 and 6 answers in blue.**

**Versions 3 and 7 answers in green.**

**Versions 4 and 8 answers in purple.**

**1)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | X | Y |  |  |
|  | 720 | 460 |  |  |
| Max | 24 | 17 | 25100 |  |
| time | 3 | 4 | 4000 | **4000** |
| material | 6 | 3 | 5700 | **6000** |
|  |  | 1 | 460 | **460** |

(720,460) for $25,100

30 hours: $25340 - $25100 = $240. Or $8 per hour.

30 pounds: $0 – already a surplus.

(571,571) for $23,411.

(360, 230) for $12,550

15 hours: $12670 - $12550 = $120. Or $8 per hour.

15 pounds: $0 -already a surplus.

(285, 285) for $11,685.

(1440, 920) for $50,200

60 hours: $50680 - $50200 = $480. Or $8 per hour.

60 pounds: $0 – already a surplus.

(1142, 1142) for $46,822.

(1080, 690) for $37,650.

45 hours: $38010 - $37650 = $360. Or $8 per hour.

45 pounds: $0 – already a surplus.

(857, 857) for $35,137.

**2)**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | A1 | A2 | B1 | B2 | C1 | C2 |  |  |
|  | 0 | 300 | 200 | 200 | 150 | 0 |  |  |
| MIN | 19 | 18 | 17 | 16 | 14 | 20 | 14100 |  |
|  | 1 |  | 1 |  | 1 |  | 350 | **450** |
|  |  | 1 |  | 1 |  | 1 | 500 | **500** |
|  | 1 | 1 |  |  |  |  | 300 | **300** |
|  |  |  | 1 | 1 |  |  | 400 | **400** |
|  |  |  |  |  | 1 | 1 | 150 | **150** |
|  |  |  |  |  |  |  |  |  |
|  | 7 | 3 | 5 | 1 | 2 | 5 | 2400 |  |

$28,200.

$4800 on shipping.

Balanced production of 850 raises cost $150 (or $1200).

$14,100.

$2400 on shipping.

Balanced production of 425 raises cost $75 (or $600)

$56,400.

$9600 on shipping.

Balanced production of 1700 raises cost by $300 (or $2400).

$42,300

$7200 on shipping.

Balanced production of 1275 raised cost by $225 (or $1800).

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Act** | **I.P.** | **Time** | **Slack** |  |  |  |
| A | --- | 6  9 | 3 | 3 | 3 | 3 |
| B | ---  SD | 9 | 0 | 0 | 0 | 0 |
| C | A,B | 7 | 0 | 0 | 0 | 0 |
| D | B | 9 | 6 | 6 | 6 | 6 |
| E | B | **11** | 2 | 2 | 2 | 2 |
| F | C | 9 | 2 | 3 | 4 | 5 |
| G | C | 8 | 0 | 0 | 0 | 0 |
| H | D,G | **3** | 0 | 0 | 0 | 0 |
| I | E | 10 | 2 | 2 | 2 | 2 |
| J | F,H | 5 | 0 | 0 | 0 | 0 |

**3) (6 points)** Draw the CPM network and determine the completion time, the critical path and the slack times for this project.

**a)** Completion Time = \_\_\_\_\_\_\_\_\_\_, **b)** Critical Path is \_\_\_\_\_\_\_\_\_\_\_, **c)** Fill in slack times on table.

32, BCGHJ

33, BCGHJ

34, BCGHJ

35, BCGHJ

**d)** If you could cut any activity time in half with the goal of decreasing the overall project completion time as much as possible, which activity should you cut and what would be the new project completion time?

B, 29

B, 30

B, 31

B, 32