# Midterm Review 9 December, questions and answers

Project Management (Ryerson University)

**GMS450 Project Management Midterm Sample Questions**

**Multiple Choice**

1. Typically, the 3 goals of a project are: _____.
    a. Budget, scope, and quality
    b. Schedule, risk, and time
    c. Time, scope, and cost
    d. Strategy, time, and cost
    e. Budget, schedule, and quality

2. The S-curve project life-cycle can be described as:
    a. Fast-slow-fast
    b. Slow-slow-fast
    c. Fast-fast-slow
    d. Slow-fast-slow
    e. Fast-fast-fast

3. Which of the following is a criteria for project selection?
    a. Is there a market offering for the project results?
    b. How risky is the project?
    c. How profitable is the project?
    d. Is the project synergistic with other important projects?
    e. All of the above

4. If the initial investment is a project is $200,000 and the expected annual net profit for the project is $47,000, the payback period is:
    a. 3 months
    b. 4 years
    c. 5 years
    d. 10 years
    e. Insufficient information to determine the payback period

5. A pure project structure has the following disadvantages, except:
    a. Expensive to operate for small projects
    b. Limited technological depth of team members
    c. “Projectitis”
    d. Improved communications
    e. Foot dragging at the end of the project

6. A project manager has a number of key roles on a project. These include all of the following, except:
    a. Strategic Planner
    b. Facilitator
    c. Communicator
    d. Convener
    e. Virtual leader

7. Which of the following is used to show linkages between people and tasks?
    a. WBS
    b. RACI
    c. Project Action Plan
    d. Project Resource Diagram
    e. Concurrent Engineering Chart

8. According to the text, the results of the launch meeting typically include:
    a. Finalizing the project team
    b. Finalizing the project's schedule
    c. Finalizing the project's budget
    d. Ensuring the project's scope is understood
    e. Selecting the project champion

9. The amount of time a noncritical task can be delayed without delaying the project is called?
    a. Surplus
    b. Flop
    c. Slack
    d. Critical time
    e. Safety

10. Which of the following is NOT an element of the Gantt chart?
    a. Actual progress
    b. Variance of the critical path
    c. The current date
    d. Scheduled milestones
    e. All of the above

11. The first unit requires 10 hours to complete. If the industry uses an 80 percent learning rate, how long should the third unit take?
    a. 10 hours
    b. 9 hours
    c. 8 hours
    d. 7.02 hours
    e. 6.40 hours

12. The budgeting approach based on the collective judgments of top and middle managers is called:
    a. Top-down budgeting
    b. Bottom-up budgeting
    c. Parametric budgeting
    d. Program budgeting
    e. Life cycle budgeting

**Practice Problems**

**Problem 1 (2 questions)**

You have just finished a very long and stressful meeting discussing the scoring of three projects as show in the table below. Each criteria have been ranked on a scale of 0 to 5, where the highest the score. The score is against a scoring rubric, for example for return-on-investment (ROI): > 60% is 5; 50% to 60% is 4; 40% to 50% is 3, 30% to 40% is 2, 20% to 30% is 1, and < 20% is 0.

| Criteria | Weight | Project X | Project Y | Project Z |
|---|---|---|---|---|
| ROI > 20% | 10% | 0 | 2 | 5 |
| Risk Level | 10% | 5 | 2 | 2 |
| Resources Available | 30% | 4 | 3 | 1 |
| Strategic Alignment | 40% | 5 | 3 | 2 |
| Customer Satisfaction | 10% | 1 | 4 | 3 |

13. Which project would you select based on the highest weighted score?
    a. Project X - Strategic
    b. Project Y - Balanced
    c. Project Z - Money Grab
    d. Project X and Y
    e. Cannot be determined

14. You have completed your analysis and you are preparing your report for approval. Your boss calls to tell you that the new CEO (the former CFO) has changed the weight slightly, with no consultation. Not surprisingly, he has made the weight for ROI>20% to be 40% and Strategic Alignment to be 10%. Your boss hopes that this does not change the result of the analysis since she wants to get going on the project. Which project would you select based on the highest weighted score with the new weights?
    a. Project X - Strategic
    b. Project Y - Balanced
    c. Project Z - Money Grab
    d. Project Y and Z
    e. Cannot be determined

**Problem 2 (5 questions)**

You have been asked to prepare a network diagram and identify the critical path for a project with 10 activities described in the table below.

| Activity | Duration (Days) | Preceding Activities |
|---|---|---|
| A | 5 | E |
| B | 10 | F, J |
| C | 3 | - |
| D | 2 | B, G |
| E | 1 | C |
| F | 3 | K |
| G | 5 | H |
| H | 7 | C |
| J | 3 | A, H |
| K | 1 | E |

15. What is the critical path for the project?
    a. C, H, J, B, D
    b. C, H, G, D
    c. C, E, A, B, D
    d. C, A, E, J, B, D
    e. There are multiple critical paths

16. What is the soonest the project can be done by?
    a. 15 days
    b. 22 days
    c. 25 days
    d. 27 days
    e. Cannot be determined

The project has started and you receive the following information in sequence (i.e. they changes build on each other):

17. Activity F can now be done in 1 day, what is the impact on the project completion?
    a. The project will be completed 2 days sooner
    b. The slack for Activity F increases by 2 days
    c. No impact on the project duration
    d. The critical path changes
    e. b and c

18. Activity G has been delayed and now is taking an additional 7 days, which is the impact on the project completion?
    a. The project will be delayed by 7 days
    b. The slack for Activity G is now 1 day
    c. No impact on the project duration
    d. The critical path changes
    e. b and c

19. Activity H has been delayed and now is taking 10 days in total, which is the impact on the project completion?
    a. The project will be delayed by 3 days
    b. The slack for Activity H is not changed
    c. The slack on Activity F is longer
    d. The critical path did not change
    e. All of the above

**Problem: 3 (10 questions)**

You are managing a small software development project with 10 modules. The project has 3 deliverables, Design, Code, and Test that are done sequentially with no overlap and each deliverable takes 10 days. The table below describes each of the deliverables:

| Deliverable | Project Budget | | | |
|---|---|---|---|---|
| | Quantity | Rate | Duration | Cost |
| Design Complete | 10 | 1/day | 10 | $ 10,000 |
| Code Complete | 10 | 1/day | 10 | $ 20,000 |
| Test Complete | 50 | 5/day | 10 | $ 10,000 |
| Total | | | 30 | $ 40,000 |

Design and Code are measured by the modules completed and Test is measured by test cases completed (of which there are 50 test cases). There is no learning curve on this project.

The Project Sponsor has asked you to provide a status report every 10 days using Earned Value. Specifically, the Project Sponsor wants the CPI, SPI, and EAC for the project included in each status report.

**Status Report 1**

10 days into the project, the design team has almost completed the 10 modules. The results are:

| Deliverable | After 10 days | |
|---|---|---|
| | Quantity | Cost |
| Design Complete | 9 | $ 10,000 |
| Code Complete | 0 | $ 1,000 |
| Test Complete | 0 | $ 1,000 |
| Total | | $ 12,000 |

**Status Report 2**

20 days into the project, the design team is complete, but coding has fallen behind due to some technical problems. The results are:

| Deliverable | After 20 days | |
|---|---|---|
| | Quantity | Cost |
| Design Complete | 10 | $ 12,000 |
| Code Complete | 8 | $ 18,000 |
| Test Complete | 0 | $ 1,000 |
| Total | | $ 31,000 |

**Status Report 3**

30 days into the project, the test team came through, thanks to overtime, and the project is done on time. The results are:

| Deliverable | After 30 days | |
|---|---|---|
| | Quantity | Cost |
| Design Complete | 10 | $ 13,000 |
| Code Complete | 10 | $ 19,000 |
| Test Complete | 50 | $ 13,000 |
| Total | | $ 45,000 |

20. For the first status report, the CV for project is approximately:
    a. – 3,000
    b. 3,000
    c. – 2,000
    d. 2,000
    e. None of the above

21. For the first status report, the CPI for project is approximately:
    a. 1.00
    b. 0.90
    c. 1.11
    d. 0.75
    e. 1.20

22. For the first status report, the EAC for project is approximately;
    a. $40,000
    b. $45,000
    c. $48,000
    d. $53,000
    e. None of the above

23. For the second status report, the EAC for project is approximately;
    a. $40,000
    b. $45,000
    c. $48,000
    d. $53,000
    e. None of the above

24. For the third status report, the EAC for project is approximately;
    a. $40,000
    b. $45,000
    c. $48,000
    d. $53,000
    e. None of the above

25. For the first status report, the SPI for project is?
    a. 1.00
    b. 0.90
    c. 1.11
    d. 0.75
    e. 1.20

26. For the second status report, the SPI for project is?
    a. 1.00
    b. 0.83
    c. 0.84
    d. 0.87
    e. 1.20

27. For the second status report, the CPI for project is?
    a. 1.00
    b. 0.83
    c. 0.84
    d. 0.87
    e. 1.20

28. For the third status report, the SPI for project is?
    a. 1.00
    b. 0.83
    c. 0.84
    d. 0.87
    e. 1.20

29. For the third status report, the CPI for project is?
    a. 1.00
    b. 0.83
    c. 0.84
    d. 0.87
    e. 0.89

**Answer Sheet**

| Question | Answer | Class | Reference |
|---|---|---|---|
| **Multiple Choice** | | | |
| 1 | C | M1 | Page 7 |
| 2 | D | M1 | Page 10 |
| 3 | E | M2 | Page 19 |
| 4 | C | M2 | Page 13 |
| 5 | D | M3 | Page 50 |
| 6 | A | M3 | Page 36 |
| 7 | B | M4 | Page 93 |
| 8 | D | M4 | Page 83 |
| 9 | C | M5 | Page 158 |
| 10 | B | M5 | Page 181 |
| 11 | D | M6 | Page 123 = 10*3^(Log(.8)/Log(2)) |
| 12 | A | M6 | Page 115 |
| **Project 1** | | | |
| 13 | A | M2 | |
| 14 | C | M2 | |
| **Project 2** | | | |
| 15 | A | M5 | |
| 16 | C | M5 | |
| 17 | E | M5 | |
| 18 | E | M5 | |
| 19 | E | M5 | |
| **Project 3** | | | |
| 20 | A | M6 | |
| 21 | D | M6 | |
| 22 | D | M6 | |
| 23 | C | M6 | |
| 24 | B | M6 | |
| 25 | B | M6 | |
| 26 | D | M6 | |
| 27 | C | M6 | |
| 28 | A | M6 | |
| 29 | E | M6 | |

**Problem 1**

Question 13

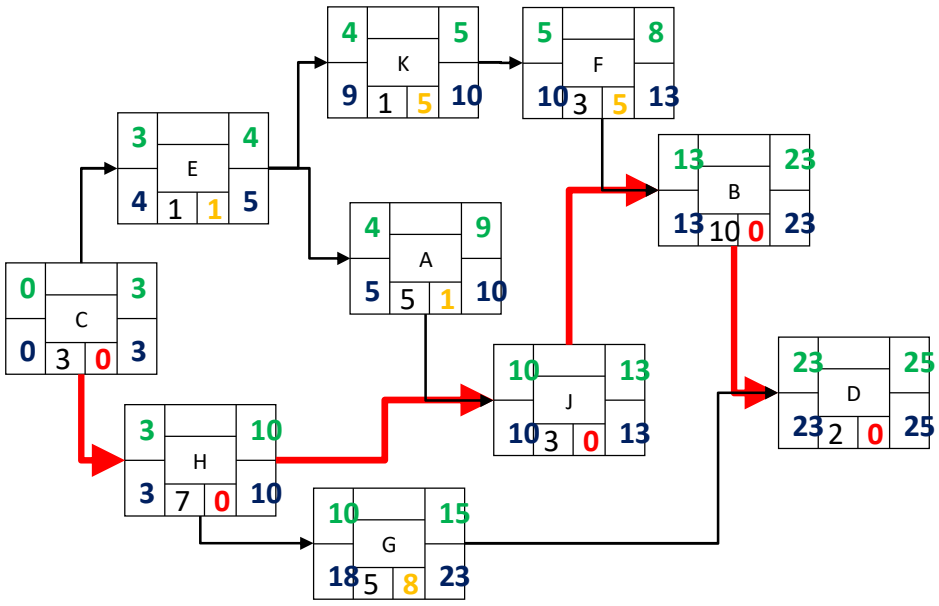
| Criteria | Weight | Project X | Project Y | Project Z |
|---|---|---|---|---|
| ROI > 20% | 10% | 0 | 2 | 5 |
| Risk Level | 10% | 5 | 2 | 2 |
| Resources Available | 30% | 4 | 3 | 1 |
| Strategic Alignment | 40% | 5 | 3 | 2 |
| Customer Satisfaction | 10% | 1 | 4 | 3 |
| **Total** | **100%** | **3.8** | **2.9** | **2.1** |

Question 13

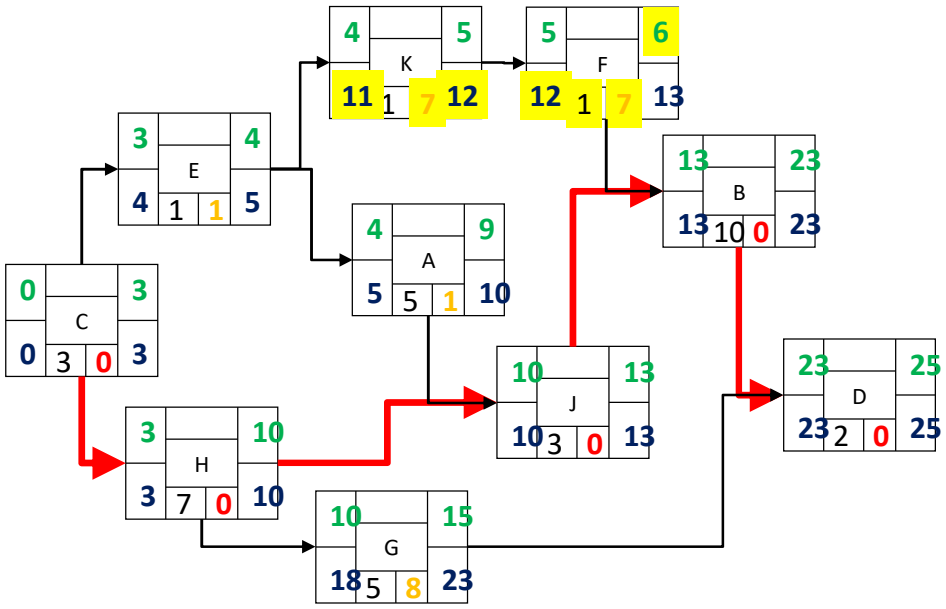
| Criteria | Weight | Project X | Project Y | Project Z |
|---|---|---|---|---|
| ROI > 20% | **40%** | 0 | 2 | 5 |
| Risk Level | 10% | 5 | 2 | 2 |
| Resources Available | 30% | 4 | 3 | 1 |
| Strategic Alignment | **10%** | 5 | 3 | 2 |
| Customer Satisfaction | 10% | 1 | 4 | 3 |
| **Total** | **100%** | **2.3** | **2.6** | **3.0** |

**Problem 2**

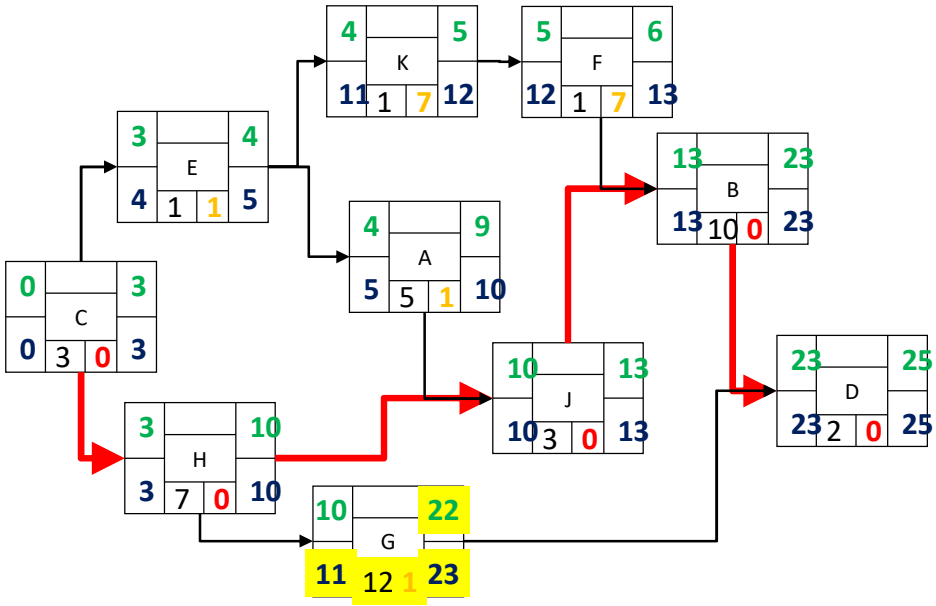
Questions 15 and 16



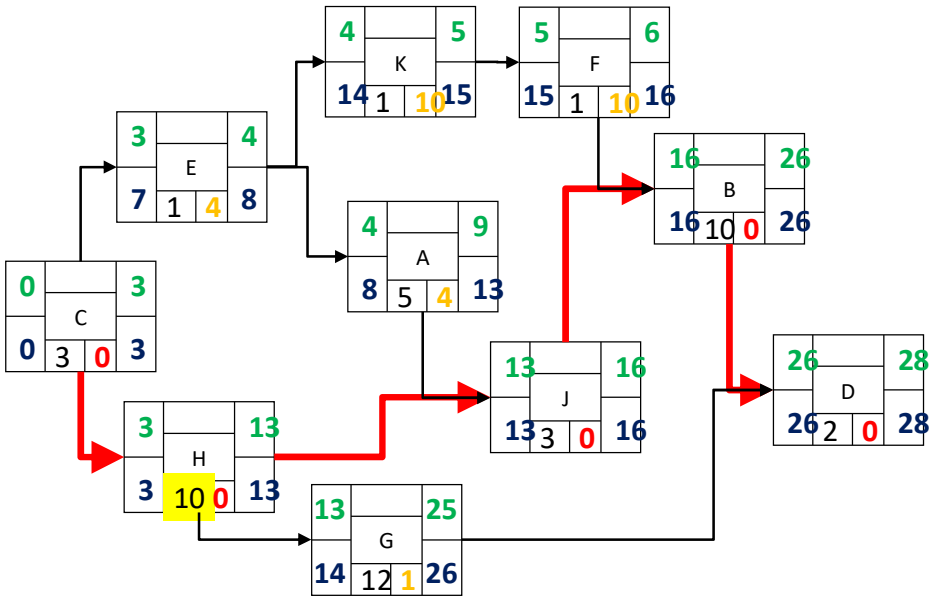
Question 17




Question 18



Question 19




**Problem 3**

Questions 20 to 29

| Deliverable | PV | EV | AC | CV | SV | CPI | SPI | ETC | EAC |
|---|---|---|---|---|---|---|---|---|---|
| **After 10 days** | | | | | | | | | |
| Design Complete | $ 10,000 | $ 9,000 | $ 10,000 | -$ 1,000 | -$ 1,000 | 0.90 | 0.90 | $ 1,111 | $ 11,111 |
| Code Complete | $ - | $ - | $ 1,000 | -$ 1,000 | $ - | | | $ 20,000 | $ 21,000 |
| Test Complete | $ - | $ - | $ 1,000 | -$ 1,000 | $ - | | | $ 10,000 | $ 11,000 |
| Total | $ 10,000 | $ 9,000 | $ 12,000 | -$ 3,000 | -$ 1,000 | **0.75** | **0.90** | 41,333 | **$ 53,333** |
| **After 20 days** | | | | | | | | | |
| Design Complete | $ 10,000 | $ 10,000 | $ 12,000 | -$ 2,000 | $ - | 0.83 | 1.00 | $ - | $ 12,000 |
| Code Complete | $ 20,000 | $ 16,000 | $ 18,000 | -$ 2,000 | -$ 4,000 | 0.89 | 0.80 | $ 4,500 | $ 22,500 |
| Test Complete | $ - | $ - | $ 1,000 | -$ 1,000 | $ - | | | $ 10,000 | $ 11,000 |
| Total | $ 30,000 | $ 26,000 | $ 31,000 | -$ 5,000 | -$ 4,000 | **0.84** | **0.87** | 16,692 | **$ 47,692** |
| **After 30 days** | | | | | | | | | |
| Design Complete | $ 10,000 | $ 10,000 | $ 13,000 | -$ 3,000 | $ - | 0.77 | 1.00 | | |
| Code Complete | $ 20,000 | $ 20,000 | $ 19,000 | $ 1,000 | $ - | 1.05 | 1.00 | | |
| Test Complete | $ 10,000 | $ 10,000 | $ 13,000 | -$ 3,000 | $ - | 0.77 | 1.00 | | |
| Total | $ 40,000 | $ 40,000 | $ 45,000 | -$ 5,000 | $ - | **0.89** | **1.00** | - | **$ 45,000** |