# King Saud University

**Department of Information Systems**

# Project Management (IS-351)

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**Question 1:** Explain the main items on a Gantt chart.

**ANSWER:** The tasks are WBS items. A milestone is the black diamond symbol and represents a significant event on a project with zero duration. The thick black bars with arrows at the beginning and end represent summary tasks. The light gray horizontal bars represent the duration of each individual task. The arrows connecting these symbols show relationships or dependencies between tasks.

**Question 2:** What is a milestone? Provide a few examples of milestones.

**ANSWER:** A milestone is a significant event on a project with zero duration. Examples include receiving project funding, getting customer sign-off on important documents, awarding a contract, and so on.

**Question 3:** Consider the following project network diagram. Assume all time estimates are in days.



1. How many paths are on this network diagram?

ANSWER: 2

1. How long is each path?

ANSWER: A-B-C-E is 10 days, and A-B-D-F is 16 days

1. Which is the critical path?

ANSWER: A-B-D-F is the critical path

1. What is the shortest amount of time needed to complete this project?

ANSWER: 10 days

**Question 4:** Consider the following data for a small software development project (all times are in days; proceed from node 1 to node 10).

**Activity Initial Node Final Node Estimated Time**

A 1 2 2

B 1 3 4

C 2 4 5

D 2 5 6

E 3 5 2

F 3 6 3

G 4 7 2

H 5 8 2

I 5 9 4

J 6 9 6

K 7 8 1

L 8 10 3

M 9 10 4

1. Draw a network diagram representing the project. Put the node numbers in circles and draw arrows from node to node, labeling each arrow with the activity letter and estimated time.

ANSWER

**B=4**

**C=5**

**F=3**

**A=2**

**H=2**

**K=1**

**J=6**

**D=6**

**2**

**E=2**

**G=2**

**I=4**

**L=3**

**M=4**

1. Determine how many paths there are in this network diagram, and list the paths and their lengths. For example, a path might be written as A-B-E-F-L with a length of 12 days.

ANSWER:

A-C-G-K-L = 13 days, A-D-H-L = 13 days, A-D-I-M = 16 days

B-E-H-L = 11 days, B-E-I-M = 14 days, B-F-J-M = 17 days

1. What is the critical path for this project and how long is it?

ANSWER: B-F-J-M is the critical path, and it is 17 days long.

1. What is the shortest time in which this project can be completed?

ANSWER: 17 days, the same length as the critical path.

1. Can the critical path ever change on a project?

ANSWER: Yes

1. Can there be more than one critical path?

ANSWER: Yes