

# The Open University of Sri Lanka

## Faculty of Engineering Technology



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|------------------------------|---|
| Study Programme              | : Master of Technology in Industrial Engineering - LEVEL 07 |
| Name of the Examination      | : Final Examination   |
| <b>Course Code and Title</b> | <b>: MEX7120 – PROJECT MANAGEMENT</b>                       |
| Academic Year                | : 2015/2016   |
| Date                         | : 11 <sup>th</sup> December , 2016                          |
| Time                         | : 0930 – 1230 hrs   |
| Duration                     | : 3 hours   |

### General instructions

1. Read the questions carefully before answering.
2. Please note that you should write your registration number and your index number in each pages of your answer book. Do not write your name.
3. In case of doubt, please consult the supervisor or an invigilator conducting the examination.
4. This paper consists of Seven (07) questions. Answer only five (05) Questions.

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1. How a project WBS supports to achieve the project strategy and the organization strategy? Substantiate your discussion with a pragmatic example.
  2. As a project manager how do you manage project complexities and conflicts? Substantiate your answer with your experience.
  3. Discuss with your previous know-how why it is essential to have a quality system in place to ensure quality of the project deliverable(s).
  4. In a project, leader needs to get the balance between “control” and “Empowerment” of the team member right to ensure the team success. Discuss with scenarios how a project manager achieves an appropriate balance between “control” and “Empowerment”
  5. In a project why is cost controlling more difficult than monitoring. ? Substantiate your discussion with a pragmatic example.
  6. Maintenance activities of a machine are as given below.

| Activity | Duration (weeks) | Precedence          | Staff |
|----------|------------------|---------------------|-------|
| GH       | 1                | -                   | 3     |
| EL1      | 2                | GH                  | 2     |
| EN12     | 6                | EL1                 | 6     |
| AF12     | 14               | EL1                 | 6     |
| EL2      | 6                | EL1                 | 2     |
| AV12     | 6                | EL1                 | 4     |
| AR12     | 4                | EL1                 | 4     |
| AF3      | 2                | AF12                | 4     |
| EN3      | 1                | AF3                 | 2     |
| AR3      | 1                | AF3                 | 2     |
| AV3      | 2                | AF3                 | 3     |
| EL3      | 3                | AF3                 | 2     |
| TEST     | 2                | AF3,EN3,AV3,AR3,EL3 | 4     |
| H/O      | 1                | TEST                | 6     |

Due to staff constraints the maintenance manager decided to perform the task  
With a six (6) member team:

- Deduce a resource loading schedule for the maintenance task with the limited staff.
- What is the percentage of staff-week loss of the project?

7. A machine maintenance activities and their budgeted cost is as tabulated below:-

| Activity | Precedence | Duration (weeks) | Cost (\$) |
|----------|------------|------------------|-----------|
| A        | -          | 4                | 600       |
| B        | -          | 2                | 200       |
| C        | -          | 4                | 500       |
| D        | A,B        | 2                | 400       |
| E        | B,C        | 2                | 300       |
| F        | A,B        | 6                | 900       |
| G        | C          | 2                | 600       |
| H        | D,E,F      | 4                | 800       |
| I        | D          | 8                | 2000      |
| J        | G          | 8                | 720       |
| K        | G          | 6                | 870       |
| L        | H,J        | 6                | 1500      |
| M        | K          | 4                | 1200      |
| N        | I,L        | 6                | 2400      |

- Deduce a Budgeted Cost Work Schedule (BCWS) for the maintenance work.  
(Assume the cost of activities is evenly rated)
- If the Budgeted Cost Work Performed (BCWP) at the end of the 12th week is at \$4805.00 how long the maintenance works lagging behind the schedule?

- c) Maintenance Manager wants to crash the schedule to bring back the maintenance work on schedule. If maximum possible crash time is 50% of the normal time and crash cost of the each activity is double the normal cost, what is the extra cost to be borne to bring back the task on schedule?

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