

COLLEGE OF ENGINEERING, SCIENCE AND TECHNOLOGY  
SCHOOL OF ELECTRICAL AND ELECTRONICS ENGINEERING

Advanced Diploma in Engineering (Electrical & Electronics)

EEE 601 ENGINEERING PLANNING

FINAL EXAMINATION (SEMESTER 1, 2018)

DATE/TIME/ROOM – Refer to Timetable

INSTRUCTIONS TO CANDIDATES

1. You are allowed 10 minutes extra reading time during which you are NOT to write.
2. Begin each answer on a fresh new page and use both sides of the sheets.
3. Write your candidate number on the top of each attached sheet.
4. The paper contains three sections, Sec A, Sec B & Sec C.
5. For all sheets of paper in which rough work has been done, cross it through and you must attach to your answer script.
6. Write clearly the number(s) of the question(s) attempted on the top of each sheet.
7. Good handwriting and way of representation of answers has weight with respect to marks.
8. **Draw diagrams if any with pencil only and label it and show all working where necessary.**
9. Always check your work before you leave the exam room.
10. **The paper is of 100 marks.**

**Section A: Multiple choice (Each question carry 1 mark; 10 x 1 = 10 marks)**

1. Being assigned as a project manager, you noticed during project execution that conflicts arise in the team on both technical and interpersonal levels. What is an appropriate way of handling conflicts?
  - (a) Conflicts distract the team and disrupt the work rhythm. You should always smooth them when they surface.
  - (b) A conflict should be handled in a meeting so that the entire team can participate in finding a solution.
  - (c) Conflicts should be addressed early and usually in private, using a direct, collaborative approach.
  - (d) You should use your coercive power to quickly resolve conflicts and then focus on goal achievement.
2. What is the purpose of a project charter?
  - (a) To formally authorize a project or a phase and document initial requirements which satisfy the stakeholder's needs and expectations.
  - (b) To document how the project will be planned, executed, monitored/controlled, and closed.
  - (c) To link the project, which is going to be planned, executed, and monitored/controlled to the ongoing work of the organization.
  - (d) To describe the process of performing the work defined in the project management plan in order to achieve the project's objectives.
3. What does the term best practice often refer to?
  - (a) A standardized set of deliverables, like plans, reports, and checklists.
  - (b) A set of tools and techniques that a project manager should master.
  - (c) The concept of state of the art applied to project management.
  - (d) A specific sequence of work, described in terms of soft logic.
4. The project schedule:
  - (a) Is used to calculate how long the project will take
  - (b) Can only be done using a software program
  - (c) Contains the list of tasks, their duration and resources allocated
  - (d) Is the same as the Gantt chart
5. Which organization is closest to Functional organization?
  - (a) Weak Matrix Organization
  - (b) Balanced Matrix Organization
  - (c) Strong Matrix
  - (d) Projectized Organization
6. A person who is involved in or may be affected by the activities or anyone who has something to gain or lose by the activity of the project is called a:
  - (a) Team member
  - (c) Customer
  - (b) Stakeholder
  - (d) Supporter
7. A manager that manages a group of related project is called a:
  - (a) Project manager
  - (c) Project expediter
  - (b) Program coordinator
  - (d) Program manager
8. Which would typically be outside the scope of business as usual activities?
  - (a) Risk management
  - (c) Business continuity management
  - (b) New product development
  - (d) Safety management
9. Project frequently do not meet customer expectations for which of the following reasons?

- (a) Poor risk management by the contractor running the project  
(b) Poor technical ability of the contractor running the project for the customer  
(c) Technical inability and poor risk management by the contractor  
(d) Unclear scope definition by the customer for whom the project is performed
10. The foundation for project quality management may be described as the:
- (a) Confidence provided to stakeholders that requirements will be achieved  
(b) Requirements expressed in measurable terms as acceptance criteria  
(c) Audits to be performed during the project  
(d) Definition of quality roles and responsibilities

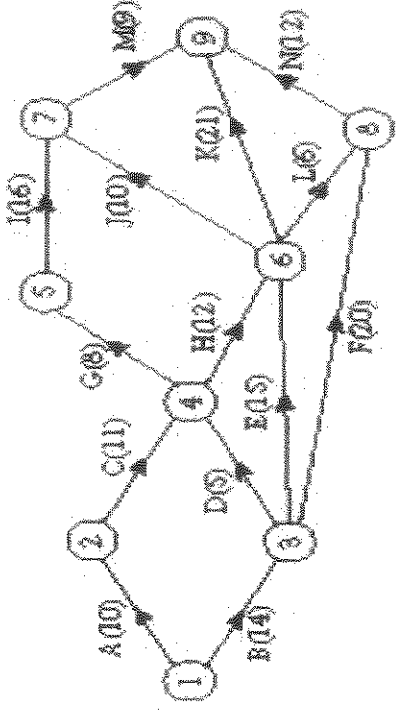
**Section B: Short Answer Questions (Each question carry 5 marks; 5 x 8 = 40 marks)**

1. Briefly describe the history of project management
2. What do you mean by functional organization? Explain its pros and cons.
3. Draw the table/diagram showing various processes under project management lifecycle.
4. Write the difference between  
(a) CPM and PERT.  
(b) Program manager & Project manager
5. What are the most common reasons for project termination?
6. What are the elements of good project governance?
7. Explain briefly risk management with respect to project planning.
8. What is EVM? Explain its three basic elements.

**Section C: Long Answer Questions (Each question carry 10 marks; 5x 10 = 50 marks)**

1. An engineering project is modelled by the activity network shown below. The activities are represented by the arcs. The number in brackets on each arc gives the time, in days, to complete the activity. The project is to be completed in the shortest time.  
(a) Calculate the ES and LS for each event.  
(b) State the critical activities.  
(c) Find the total float on activities D and F.

**Note: You must show your working.**



2. The following information is known about a project.

Activity	Activity Time (days)	Immediate Predecessor(s)
A	7	-
B	2	A
C	4	A
D	4	B, C
E	4	D
F	3	E
G	5	E

- (a) Draw the AON network for this project.  
 (b) Calculate ES, LS, EF, and LF for all the activities.  
 (c) What is the critical path and the project duration?

3. For the table given below which contains the list of activities, Optimistic time (o), Most probable time (m) and Pessimistic time (p); calculate

- (a) The critical path  
 (b) Find the probability that all critical activities will be completed in 35 days or less.

ACTIVITY	IMMEDIATE PREDECESSOR	OTIMISTIC TIME (o)	MOST PROBABLE TIME (m)	PESSIMISTIC TIME (p)
A	-	4	5	6
B	-	6	8	10
C	A	6	6	6
D	B	3	4	5
E	B	2	3	4

F	C,D	8	10	12
G	E	6	7	8
H	C,D	12	13	20
I	F,G	10	12	14

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given below answer:

- Construct CPM diagram for activities list.
- Determine EARLIEST start time for each event (working forward from project start).
- Determine LATEST start time for each event (working backwards from project end).
- Identify the CRITICAL PATH (and the 'float' time for any non-critical activities).

Name of the Activity	Duration in Days	Precedence
A	3	-
B	3	A
C	4	-
D	1	C
E	3	B,D
F	2	A,B,D
G	2	C,F
H	4	G
I	1	C
J	3	E,G
K	5	F,H,I

5. With respect to EVM answer below questions:

- Explain Variance and its two types.
- Write formulae for Performance indices.
- If BCWP is 20 pm and ACWP is 15 pm, calculate CPI.

**Note: You must show your working.**

-----THE END-----