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SPRING END SEMESTER EXAMINATION-2016

8th Semester B.Tech Dual Degree

SOFTWARE PROJECT MANAGEMENT

PGCS-227

(Regular-2012 & Back of Previous Admitted Batches)

Time: 3 Hours **Full Marks: 60**

Answer any SIX questions including Question No.1 which is compulsory.

The figures in the margin indicate full marks.

Candidates are required to give their answers in their own words as far as practicable and all parts of a question should be answered at one place only.

1. Answer in brief. [2 × 10

a) How is software project different from other types of project?

b) Write some measurable quality characteristics of a software product.

c) Why and when the work breakdown structure is used in a project?

d) What are the characteristics of a critical path?

e) What is the general approach in a recruitment process?

f) When and why a dummy activity is used to construct a network diagram?

g) While developing the software project, what are the quality parameters based on ISO 9126 one will aim for?

h) There are managers in an organization who believe in both theory X and Y. Are they successful managers? Substantiate with your idea.

i) While working in teams, Team Heedfulness is very much essential. Explain.

j) What corrective actions can be taken by the project manager in case of schedule delays and cost overruns?

2. a) Explain the different levels of SEI-CMMi with a diagram. [4

b) Explain why discounted cash flow technique provides better criteria for project selection than net profit or return on investment. Use some examples. [4

3. a) Explain a Gant Chart with its merits and demerits. [4

b) Consider a software development project with seven tasks T1 – T7. The estimated duration of these seven tasks in weeks are 3, 2, 3, 5, 2, 4 and 5 respectively. T2 and T4 can start when T1 is complete. T3 can start when T2 is complete. T5, T6, and T7 can start when both T3 and T4 are complete. Developer A is available from the start of the project and developer B and C become available after three weeks of the start of the project. Schedule the project and show your results in the form of a bar chart and resource histogram. [4

4. a) What are the considerations are required while constructing a precedence network? Suggest with diagrams. [4

b) Explain the advantages of a functional organization over a project organization. Also explain why software development houses prefer to use project organization over functional organization. [4

5. a) PERT network was developed to take account of uncertainties surrounding estimates of task duration. Then how the time estimate is determined? What are the benefits of PERT? [4

b) Draw a PERT network to find out the total duration of completion of the project. [4

Activity	Precedence	Optimistic time (weeks)	Nominal time (weeks)	Pessimistic time (weeks)
A	-	2	4	6
B	A	3	6	9
C	A	12	14	16
D	B	10	12	14
E	C	3	6	9
F	D, E	4	6	8

6. a) Describe the fixed price contract in a management negotiation with vendors. Describe the advantages and disadvantages of this type of contract. [4

b) A system to be designed and implemented is counted as comprising 3,200 FPs. What would be the total charge according to the schedule given in table below. [4

Function Point (FP) Count	Function design cost/FP	Implementation cost/FP	Total cost/FP
Up to 2,000	$242	$725	$967
2,001 – 2,500	$255	$764	$1,019
2,501 – 3,000	$265	$793	$1,058
3,001 – 3,500	$274	$820	$1,094
3,501 – 4,000	$284	$850	$1,134

7. a) Draw up an activity network for the activities below. Identify the critical path. [4

Activity	Duration (days)	Depends on	Resource type
A	3		SA
B	1	A	SD
C	2	A	SD
D	4	A	SD
E	3	B	SC
F	3	C	SC
G	6	D	SC
H	3	E, F, G	SA

SA=system analyst; SD=system designer; SC=software coder

b) What impact would there be on the project if there were only two system designers? [4

8. a) Compare and contrast between chief programmer team and democratic team. [4

b) The enhanced college information system maintenance jobs system has been installed, and is normally available to users from 8:00 a.m. until 6:00 p.m. from Monday to Friday. Over a four-week period the system was unavailable for one whole day because of problems with a disk drive and was not available on two other days until 10:00 in the morning because of problems with overnight batch processing runs. What were the availability and the mean time between failures of the service? [4

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