Registration no: | | | | | | | | | | |

Total Number of Pages: 2 **M.TECH**

MT306, MT324

3rd Semester Regular /Back Examination – 2016-17

SOFTWARE PROJECT, PROCESS AND QUALITY MANAGEMENT , **SOFTWARE PROJECT MANAGEMENT**

BRANCH : Computer Science & Engineering

Time: 3 Hours

Max Marks: 70

Q.CODE:Y832

Answer Question No.1 which is compulsory and any five from the rest.

The figures in the right hand margin indicate marks.

Q1 Answer the following questions (2 x 10)

a) How can we estimate the effort required to develop a program.

b) Differentiate between product metrics and process metrics.

c) *Spiral model is called as a meta model*. Justify the statement.

d) Distinguish risk mitigation from risk reduction.

e) Why is quality management an essential part of effective overall project management?

f) Suppose you are the project manager of a small team developing a business application. Assume that you have experience in developing several similar products. If you are asked to make a choice between democratic and chief programmer team organizations, which one would you adopt for your team? Explain your reasoning.

g) Calculate the return on investment for two projects, A and B respectively. Project A has a net profit of Rs. 60,000 with an initial investment of Rs 1, 00,000. Project B has a net profit of Rs. 75,000 with an initial investment of Rs 1, 20,000. Both the projects span over a time of 5 years. Decide which, on the basis of this criterion, project is worthwhile.

h) Over-estimation may cause the project to take a longer duration to complete. Explain the concept with the help of two laws- Parkinson's and Brook's.

i) What is the difference between a version and a revision of a software product? Explain with a suitable example.

j) ISO 9126 identifies six major external software quality characteristics. State them.

Q2 a) The effectiveness of a team in achieving the project objectives is significantly affected by how a department is organized into teams. Discuss about the department structure. (5)

b) Discuss about the Earned Value Analysis. (5)

Q3 What is Function point metric? How does it overcome the shortcomings of LOC? How do we compute the Function Point? State a major shortcoming of Function point metric and how do we overcome it? (10)

Q4 Three recent university graduates have formed a partnership and have opened a startup firm. The information in the following table pertains to their project that is about to commence. (10)

Activity	Immediate Predecessor(s)	Estimated Duration (days)
A	—	15
B	. A	12
C	B	6
D	B	5
E	C	3
F	—	8
G	F	8
H	F	9
I	G	7
J	H	14
K	J	6

a. Draw the precedence network diagram.
b. As a project manager, which activities would you be concerned with in terms of timely project completion? Explain.
c. Determine the following values for each activity: the earliest start time, the earliest finish time, the latest start time, the latest finish time, and the activity slack time.
d. As a project manager, where would you use a Gnatt chart and a PERT chart?

Q5 a) A few years ago, Sun Microsystems decided to develop and market StarOffice, a set of desktop tools that would be comparable to Microsoft's Office suite of tools but would be targeted for UNIX rather than Windows. At that time, no other major UNIX vendor had developed or was planning to develop such a product. (5)
Assuming yourself to be a part of the development team, what process model would you have used? Justify your answer.

b) What is project portfolio management? Discuss the key aspects of portfolio management? (5)

Q6 a) Discuss about the six sigma methodology. (5)

b) What is configuration of a software product? What is configuration management? Discuss the configuration management activities. (5)

Q7 How does a project manager plan for risks? (10)

Q8 Write short notes on any *five* (5 x 2)

a) Jensen's model
b) Business Case
c) The five frame work activities of PSP
d) Scrum model
e) Egoless programming
f) Schedule compression
g) Software Quality Circles
h) Red/ Amber/ Green (RAG) reporting