Master of Computer Application Examination, 2018

(1st year, 2nd semester)

Software Project Management

Time: 3 hours Full Marks: 100

Answer Question no.1 and any **three** (**3**) from the rest

1.

a) What is Critical Path Method (CPM)? Why would it be used?
b) Why is *project crashing* required sometimes?
c) What are the reasons behind the failure of IT projects?
d) What qualities of a person make him/her a successful project manager?
e) What factors affect the accuracy of estimation of a project?
f) What is *Contract Closure* of a project?
g) What is meant by *Logical Lines of Code*?
h) What are the different types of models in COCOMO 2?

4+3+4+3+3+3+2+3=25

2.

a) What is *Administrative Closure* of a project?
b) How will the acceptance of final project deliverables be verified? How can the *lessons learned* session be conducted and what will be the possible discussions in the session?
c) Why are "solicitation of feedback" and "data archiving" considered to be a couple of best practices during project closure?
d) Suppose an app development company has decided to launch a new app in the open market. The requirements of the app are based on market survey and general requirements of users who took part in the survey. What are the benefits and problems of such endeavour on the Return on Investment (RoI)?
e) How does *tracking* a project help *controlling* the project?

4+(3+5)+4+4+5=25

3.

a) What is an Elementary Process (EP)? What are the different Elementary Processes of different functions? Give an example of each. Show the relationship among all EPs with respect to an application.
b) How is Function Point (FP) calculated for different EPs? Provide necessary definitions for the variables used.
c) What are the disadvantages of using Source Lines of Code (SLoC) as a metric?

(2+8+2)+(5+4)+4=25

4.

a) Consider the following project for developing a new software application with its activities and duration (in days). Define *early* and *late event times* for nodes. Develop the project network and find out the above-mentioned *times*.

Table 1: Project Activities with Duration

Activity	Predecessor	Duration
A = training software personnel		08
B = purchase equipment		10
C = develop first module of application	A, B	15
D = develop second module	A, B	20
E = test second module	D	05
F = integrate application with two developed modules	C, E	10

b) Under what circumstances and for what purpose will Program Evaluation and Review Technique (PERT) be used? Justify your answer.

c) What does Configuration Management (CM) provide? Is CM costly? Justify.

(4+4+8)+4+5=25

5.

a) What are the keys to a successful project?

b) What are some of the important project planning duties of project manager? Why is staffing considered to be one of the duties of a project manager?

c) What is meant by *transactional role* that a project manager is supposed to perform?

d) What are the triple constraints of project management? Why are these considered to be important?

e) What are project management skills?

6+(3+2)+3+(3+3)+5=25

6.

a) What is Software Quality Assurance (SQA)? How does it encompass the entire software? Give a suitable example that shows that SQA is necessary for a software product.

b) Mention the modern quality factors associated with a software product and elaborate on any two.

c) How is software project management different from project management in other industries?

d) What are the maturity levels of the SEI Capability Maturity Model (CMM)? What are the differences between Level 4 and Level 5 of this model?

(2+4+2)+5+4+(5+3)=25

7.

a) Consider the following table of different parameters with weightages for a new software.
Calculate the Function Point (FP) of the software.

Table 2: Function point complexity weights

Measurement parameter	Weightage					
	Simple	Nos.	Average	Nos.	Complex	Nos.
Number of user inputs	3	4	4	2	6	0
Number of user outputs	4	2	5	4	7	2
Number of user inquiries	3	5	4	5	6	1
Number of files	7	12	10	2	15	2
Number of external interfaces	5	2	7	0	10	1

b) What must be the properties of a good quality system? What activities are required for a good quality system?

c) What is meant by *free float* of an activity in a project? What is *critical activity*? What should be the *total float* of critical activity? Justify your answer.

d) What is the difference between Functional Work Breakdown Structure and Activity Work Breakdown Structure?

10+(3+3)+(2+2+2)+3=25

--- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- --- ---