UNIVERSITY OF PETROLEUM
AND ENERGY STUDIES

End Semester Examination – May, 2018

Program/course: MBA (Oil & Gas) **Semester – 2**
Subject: Project Management and contract administration

Max. Marks : 100
Code : **LSCM 8001** **Duration** : 3 Hrs
No. of page/s: 5

SECTION A

Choose the correct alternative
Each question carries 1 mark

1 Top management of an organisation is considering how to structure a project team that will not directly disrupt ongoing operations. The project needs to be done quickly and a high level of motivation will be needed in order to do that. For this situation, the _____ organization structure would be the best choice for the project.
 A. Functional
 B. Balanced matrix
 C. Weak matrix
 D. Strong matrix
 E. Projectized

2 Which of the following is NOT true regarding organizing projects within a matrix arrangement?
 A. Its flexibility supports a strong project focus that helps alleviate stress among project team members
 B. It is designed to optimally utilize resources by having individuals work on multiple projects as well as being capable of performing normal functional duties
 C. There are usually two chains of command
 D. Provides a dual focus between functional/technical expertise and project requirements that is missing in either the project team or the functional approach
 E. It is a hybrid form of organization that combines characteristics of both dedicated project teams and functional organization

3 The chances of a risk event occurring as a project proceeds through its life cycle tend to
 A. Slowly rise.
 B. Drop sharply and then level out.
 C. Rise sharply and then level out.
 D. Remain about the same.
 E. Slowly drop.

4 A list of questions that address traditional areas of uncertainty on a project is termed as
 A. Risk profile.
 B. Questionnaire.
 C. Research matrix.
 D. Query.
 E. Checklist.

5 Based on the following, which event should you be most concerned about?

Risk Event	Likelihood	Impact
Bad weather	2	3
Design flaw	3	5
Accident	1	5
Shipment delay	2	2
Power outage	1	5

A.   Bad weather
B.   Design flaw
C.   Accident
D.   Shipment delay
E.   Power outage

6 Resources are adequate, but demand varies widely over the life of the project. Delaying noncritical activities to lower peak demand on resources is known as resource
 A.   Shifting.
B.   Effectiveness.
C.   Manipulating.
D.   Smoothing.
E.   Allocation.

7 When developing a new software package, logically, the software must be designed before the code is written, and the code must be written before it is tested. These activities are dependent on each other by _____ constraints.
A.   Physical
B.   Technical
C.   Resource
D.   Schedule
E.   Time

8 Resource leveling or smoothing can have all the following results on a project EXCEPT
 A.   Lower peak resource demand.
B.   Reduced resource need over the life of the project.
C.   Reduced fluctuations in resource demand.
D.   A longer project duration.
E.   A more sensitive network.

9 In a resource-constrained project, which of the following is most likely to be changed?
A.   The completion date
B.   The budget
C.   Project quality
D.   Resource levels
E.   Scope creep

10 A key distinction between a risk response and a contingency plan is
 A.   A risk response is established only for moderate risks while contingency plans are established for major risks.
B.   A risk response is part of the actual implementation plan and action is taken before the risk can materialize, while a contingency plan goes into effect only after the risk has transpired.
C.   A risk response is only effective when you are able to assess the likelihood of the risk and its impact on the project; all other risks are covered by contingency planning.
D.   A risk response is created by the project team and the project manager while the project manager and the customer agree on the contingency plan.
E.   A risk response is action that is the response to a risk once it has happened and the contingency

11 If an activity has been crashed for time, it is expected that for this activity
    a. CPI will be > 1 and SPI will be > 1
    b. CPI will be < 1 and SPI will be > 1
    c. CPI will be > 1 and SPI will be < 1
    d. CPI will be < 1 and SPI will be < 1

12 A task has been assigned To, Tm and Tp as 4, 6 and 14 respectively. The expected time for the activity is
    a. 8 days
    b. 12 days
    c. 7 days
    d. 10 days

13 The duration of time by which an activity can be delayed without affecting early start of its succeeding activities is called
    a. Total slack
    b. Free slack
    c. Independent slack
    d. None of above

14 A project is acceptable if
    a. IRR > Expected return rate
    b. IRR = Expected return rate
    c. IRR < Expected return rate
    d. IRR ≠ Expected return rate

15 WBS is used for
    a. Establishing hierarchy of project team
    b. Grouping of activities
    c. Both a and b
    d. None of a and b

16 Which of the following is an incorrect statement
    a. Gantt chart can be used for resource planning
    b. Network analysis establishes project budget
    c. Network analysis establishes project completion time
    d. Gantt chart can be used for tracking of project progress

17 A project is running behind schedule. Its critical ratio is 1.1
    a. The project is cost overrun
    b. The project is cost underrun
    c. Project is exactly as per budget
    d. Cannot say with certainty

18 In cost monitoring, the s-curve depicts the relation between:
    a. Schedule completion and time.
    b. Cumulative value and time.
    c. Schedule completion and value resources.
    d. resources and time

19 Which of the following is NOT true
    a. Critical path cannot include activities with slack
    b. Critical path cannot include dummy activities
    c. There can be more than one critical path in a network
    d. Critical path is the longest path in the network

20 Selection of a project because it is necessary to keep plant working is on the basis of
    a. Sacred cow
    b. Competitive necessity
    c. Operating necessity
    d. None of above

SECTION B

1. Briefly discuss various project management knowledge areas as given by Project Management Body of Knowledge (PMBOK®), the project management standard by Project Management Institute (PMI), USA.

2. Briefly discuss the different stages of project team development.

3. What are the different risk response strategies employed for managing negative risks.

4. A project involves an investment of Rs 50,000 at the end of each year for 4 years. The returns are Rs. 40000 at the end of each year for 5 years. Calculate the NPV. The rate of interest is 10%.

5. Explain the stages involved in project life cycle

6 Following is the information related to a software development project.

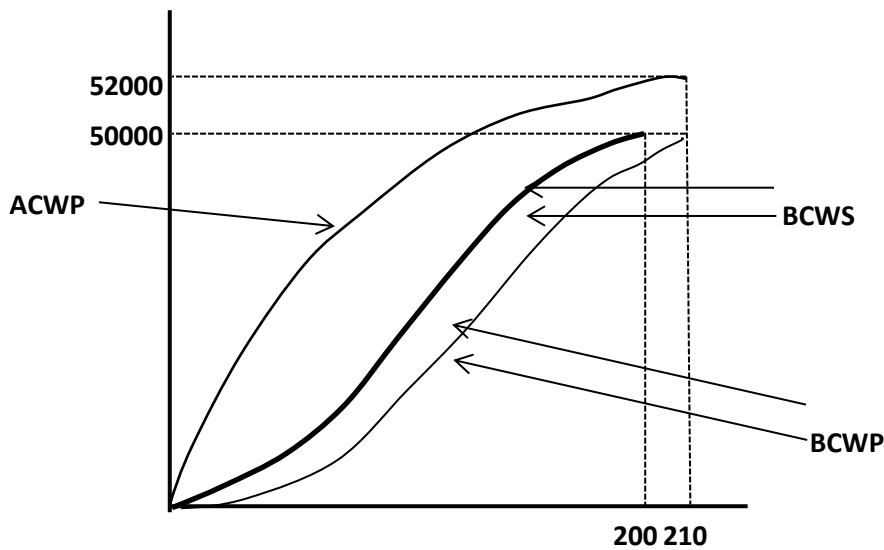| S. No.	Task	Task code	Predecessors
1	Specification development	A	-
2	Process mapping	B	-
3	Developing software for process components	C	A, B
4	Testing of software	D	C
5	Developing hardware specifications	E	B
6	Procurement of hardware	F	E
7	Integration of software components	G	C
8	Installation of software on hardware	H	F, G
9	Pilot test	I	H
10	Training of users	J	I

Develop a network for the project.

Attempt any three questions

Each question carries 10 marks

1 Interpret the following graph.

2 A project was evaluated at different milestones for performance. The data collected at different milestones is as under.

Milestone	1	2	3	4	5
Actual cost incurred	1,02,000	1,65,000	2,75,000	2,98,000	3,79,000
Work completed	20%	35%	54%	60%	75%
Work scheduled	24%	39%	52%	64%	73%

If the total budgeted cost for project was Rs 5, 00,000, comment on the performance of project.

3 Discuss the relative advantages and disadvantages of the functional, matrix and projectized organisational structures for managing projects.

4 The requirements of system analysts and design engineers for a consultancy project alongwith project activity details are given below:

ACTIVITY	DURATION IN WEEKS	PREDECESSORS	SYSTEM ANALYSTS (NOS.)	DESIGN ENGINEERS (NOS.)
J	6	-	8	3
M	4	J	5	4
V	6	M	3	2
Y	8	V	2	3
L	2	J	5	3
Q	8	L	3	2
Z	2	Y,Q	5	3

    a) Develop a resource requirement plan for the above project.
    b) The maximum weekly availability of system analysts is 8 nos. and design engineers is 5 nos. Using resource levelling, determine whether the activities can be scheduled to satisfy these constraints without delaying the project.

5   Explain the steps in resource scheduling. What is the difference between resource levelling and resource constrained scheduling?

SECTION D

Study the case and answer the questions
Maximum marks 30

        Alpha solutions private limited – Planning for new office building

"Anil, you can consider the budget as approved. Schedule a meeting with Mr. Arya and prepare the complete plan for construction" Mehra told Anil while crossing his cabin. "You can involve Anuj with you if you want"

"Yes sir I would like Anuj with me. Recently he has been showing his analytical capabilities. I plan to raise him to senior project assistant shortly." Anil said.

"Please plan for requirement of cash also with timeline so we can arrange it when required"

"I will do that sir" Anil responded

In a detailed meeting with Mr. Arya, 3 days later, Anil and Anuj arrived at the time estimates of the project activities. They also established the interrelationship of the activities.

The details were presented to Mehra in a meeting a few days later.

Activity number	Activity	Code	Budgeted cost (in lakhs)	Time estimate (in weeks)		
				Optimistic	Most likely	Pessimistic
A	Advertisement for architect	P11A	1.75	3	3	3
B	Selection of architect	P11B	0.75	2	4	7
C	Design by architect	P12A	2.25	5	9	15
D	Design approval from regulatory body	P12B	2.00	6	12	22
E	Advertisement for contractor	P22A	1.50	3	3	3
F	Selection of Contractor	P22B	0.50	2	5	8
G	Specification development	P23A	1.25	4	9	14
H	Order placement	P23B	0.55	2	3	6
I	Building construction	P23C1	65.45	30	42	48
J	Wood work	P23C2-1	32.50	6	9	14
K	Furnishing	P23C2-2	20.50	3	7	12
L	Upholstery	P23C2-2	5.50	3	5	9

Activity number	Activity	Code	Predecessor activities
A	Advertisement for architect	P11A	_
B	Selection of architect	P11B	A
C	Design by architect	P12A	B
D	Design approval from regulatory body	P12B	C
E	Advertisement for contractor	P22A	_
F	Selection of Contractor	P22B	E, G
G	Specification development	P23A	D
H	Order placement	P23B	F
I	Building construction	P23C1	D, F
J	Wood work	P23C2-1	I
K	Furnishing	P23C2-2	I
L	Upholstery	P23C2-2	J,K

"Can we complete everything in 42 weeks?" Mehra asked. "And where is the plan for resource requirement?"

"We are developing resource plan and responsibility plan sir, it will be ready by day after tomorrow" Anil said

.**QUESTIONS**

1. What is the probability of completing the project in 42 weeks?
2. What is the expected time of project completion?
3. Develop a PERT network for the project.
4. Prepare a baseline budget curve for the project.