### UNIVERSITY OF PETROLEUM AND ENERGY STUDIES
### End Semester Examination, May 2019

**Course:   Project Management**                                        **Semester:  VI**
**Program:   BBA (DM, E-Commerce)**                              **Time: 03 Hours**
**Course code:     BBCG 108**                                         **Max. Marks: 100**
**Instructions: Use of calculator is allowed**

| SECTION A (Fill in the blanks) | | |
|---|---|---|
| | **Marks** | **CO** |
| Q 1  a) PMBOK stands for _____.<br>b) A _____ is a temporary endeavor undertaken to create a unique product, service or result.<br>c) The critical activities in a project network have _____ slack time.<br>d) The full form of IRR is _____.<br>e) The final phase in project life cycle is _____.<br>f) CPM stands for_____.<br>g) If cost of capital = _____, then NPV becomes zero.<br>h) In PERT, the time duration of project activities is _____.<br>i) A company executing project issues a _____, defining the project scope, the project goals, name the project manager, his directing authority soon after the appointment of project manager.<br>j) An elaborate effort in above direction will produce _____. | **2\*10 = 20** | **CO1, CO2, CO3** |
| **SECTION B (Write short notes on any four)** | | |
| Q 2  Project Manager | **5** | **CO1** |
| Q 3  Market Feasibility of Project | **5** | **CO2** |
| Q 4  Capital Cost | **5** | **CO3** |
| Q 5  Contract | **5** | **CO4** |
| Q 6  Tendering | **5** | **CO4** |
| **SECTION-C (Answer any two questions)** | | |
| Q 7  Describe different phases of project life cycle with the help of life cycle curve. | **15** | **CO1** |
| Q 8  The government is considering a multi-purpose river valley project, which would involve construction of a dam, a reservoir, a powerhouse, and several irrigation canals. The project would supply water for irrigation, generate electricity and provide a measure of protection against floods. The project control board has gathered the following information.<br><br>**The project will require the following during the construction stage:**<br>1. Indigenous power equipment costing Rs. 200 million.<br>2. Imported power equipment costing $ 10 million. | **15** | **CO2** |

3. 20,000 tons of steel produced indigenously and made available to the project at Rs. 6000 a ton.
4. 350,000 tons of cement produced indigenously and made available to the project at Rs. 800 a ton.
5. Other construction materials (sand, bricks, etc.) costing Rs. 100 million.
6. 25 million man-days of unskilled labor for which the project control board has decided to pay a daily wage rate of Rs. 10.
7. Skilled labor costing Rs. 100 million.

Once commissioned, the operating and maintenance cost of the project would be Rs. 35 million per year.

**The annual benefits expected from the project would be as follows:**
1. 300,000 acres of land will be irrigated.
2. 120 million units of electricity will be generated for domestic use.
3. Flood damages to the extent of Rs. 10 million will be saved annually.

The following additional information is available:
1. Power equipment produced indigenously is a tradable item whose FOB value is $ 15 million.
2. A gift of $ 10 million, available from a foreign agency, can be used for acquiring imported equipment. This gift, however, is not project-tied. Hence, if it is not assigned to the project, it can be used for some other purpose.
3. The shadow price per dollar is Rs. 12, though the official price is Rs. 10.
4. Steel is a tradable item whose FOB value is $ 400 per ton.
5. Cement is not a tradable item. One-half of the cement required for the project will come from the additional domestic production which has a cost of Rs. 700 per ton; one- half of the cement required for the project will come from diversion from other consumers who are willing to pay, on average, Rs. 1,200 per ton.
6. Other construction materials are non-tradable items. The requirement of the project will be met by way of additional production. The cost of this production will be Rs. 80 million.
7. The shadow price of unskilled labor is Rs. 5 per day
8. The compensation paid to skilled labor reflects what others are willing to pay for their services.
9. The operating and maintenance cost of Rs. 35 million reflects economic value as well.
10. The water levy by the project control board would be Rs. 100 per acre. However, the value of additional output per acre, attributable to the water supplied by the project, will be Rs. 400 a year.
11. The electricity tariff charged by the project control board would be 30 paise per unit. The consumer willingness to pay, however, would be on an average, 50 percent more than the tariff charged.
12. The project control board is not able to collect anything for the protection provided against floods.

**Define the costs and benefits from the private (Project Control Board's) and the economic point of view.**

| Q 9 | What are the components of project management system? Explain them. | | | | 15 | CO4 |

**SECTION-D**

| Q 10 | **The following table gives the data on a project.** | | | | | |
|---|---|---|---|---|---|---|

| ACTIVITY | DESCRIPTION | IMMEDIATE PREDECESSORS | DURATION (WEEKS) | TOTAL COST Rs. '000 |
|---|---|---|---|---|
| H | Basic design | - | 10 | 100 |
| I | Hardware design for A | H | 8 | 64 |
| J | Hardware design for B | H | 6 | 96 |
| K | Drawings for B | J | 4 | 16 |
| L | Software specifications | J | 2 | 36 |
| M | Parts purchase for B | J | 4 | 84 |
| N | Parts purchase for A | I | 4 | 80 |
| O | Drawings for A | I | 5 | 50 |
| P | Installation drawings | I,J | 5 | 60 |
| Q | Software purchases | L | 5 | 80 |
| R | Delivery of parts for B | M | 5 | 0 |
| S | Delivery of parts for A | N | 3 | 0 |
| T | Software delivery | Q | 3 | 0 |
| U | Assembly of A | O,S | 1 | 14 |
| V | Assembly of B | K,R | 5 | 80 |
| W | Test A | U | 2 | 24 |
| X | Test B | V | 3 | 36 |
| Y | Final Installation | P,W,X | 8 | 104 |
| Z | Final system test | Y,T | 6 | 66 |

(Q 10 marks: **30**, **CO3**)

a)  **Draw the network for this project**
b)  **Plan the project schedule with the help of a Gantt Chart.**
c)  **Prepare the project cost baseline.**

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## SECTION A (Fill in the blanks)

| | | Marks | CO |
|---|---|---|---|
| Q 1 | a) Triple constraints in project management are: Scope, _____ & Cost.<br>b) SCBA stands for _____.<br>c) The longest path in the project network is called _____.<br>d) The full form of EIA is _____.<br>e) The first phase in project life cycle is _____.<br>f) AACE stands for_____.<br>g) If NPV is less than zero, then project is _____.<br>h) In PERT network diagram, the activities are shown as_____.<br>i) The time phase cumulative cost curve is _____ shaped.<br>j) The two ingredients of project cost estimates are quantities & _____. | 2*10 = 20 | CO1, CO2, CO3 |

## SECTION B (Write short notes on any four)

| | | | |
|---|---|---|---|
| Q 2 | Project Features & Characteristics | 5 | CO1 |
| Q 3 | Social Impacts of Projects | 5 | CO2 |
| Q 4 | Cost Estimation | 5 | CO3 |
| Q 5 | Force Majeure | 5 | CO4 |
| Q 6 | Purchase Order | 5 | CO4 |

## SECTION-C (Answer any two questions)

| | | | |
|---|---|---|---|
| Q 7 | Briefly discuss different techniques of project financial appraisal with illustrations. | 15 | CO1 |
| Q 8 | Consider the data of a project shown in the following table. | 15 | CO2 |

Q 8 table:

| Activity | Immediate predecessor(s) | Time (weeks) | Cost (Rs.) |
|---|---|---|---|
| A | | 8 | 2000 |
| B | - | 10 | 4000 |
| C | A | 6 | 3000 |
| D | A | 9 | 5000 |
| E | B | 10 | 2500 |
| F | B | 13 | 5000 |
| G | E | 5 | 1000 |

If the indirect cost per week is Rs. 300, find the total project cost.

| Q 9 | Why tendering is necessary and what are their types? Explain any two types of tendering process in detail. | 15 | CO4 |
|---|---|---|---|

**SECTION-D**

| Q 10 | Mr. Gupta is planning to build a house in Dehradun. The size of the house is 2,500 sq. feet, and will cost Rs. 3,000 per sq. foot (including the plot and the construction).The activities in building the house, the precedence, the durations and the percentage of total cost are given below. | 30 | CO3 |
|---|---|---|---|

| ACTIVITY ID | DESCRIPTION | PRECEDENCE | DURATION (WEEKS) | %AGE OF TOTAL COST |
|---|---|---|---|---|
| A | Excavation and framing | - | 4 | 24 |
| B | Roof and Fireplace | A | 3 | 8 |
| C | Wiring roughed in | A | 1 | 3 |
| D | Plumbing roughed in | B,C | 2 | 6 |
| E | Siding on | D | 2 | 5 |
| F | Windows, insulation, walls, plaster and garage | E | 8 | 17 |
| G | Furnace | B | 1 | 9 |
| H | Plumbing fixtures installed | D | 2 | 4 |
| J | Exterior paint, light fixtures, hardware installed | F,G,H | 6 | 10 |
| K | Floors laid and finished | H | 4 | 6 |
| L | Carpet and trim installed | K | 1 | 4 |
| M | Interior decoration | J,L | 2 | 4 |

Prepare the project network diagram, construction plan using Gantt chart and project cost baseline.