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**Presidency University**

**Bengaluru**

 **SCHOOL OF ENGINEERING**

**MAKE UP EXAMINATION – SEPTEMBER 2023**

**Course Code**: CIV 2004

**Course Name**: Integrated Project Management

**Program & Sem**: B.TECH

**Date**: 01.10.2023

**Time**: 09:30 AM to 12:30 PM

**Max Marks**: 100

**Weightage**: 50%

 **Instructions:**

1. *Read the all questions carefully and answer accordingly.*
2. *Standard normal cumulative probability table is provided at the end of the question paper.*

**Part A [Memory Recall Questions]**

**Answer all the Questions. (10Qx 2M= 20M)**

1. The amount of duration by which an activity can be delayed without affecting the overall project duration is known as \_\_\_\_\_\_\_\_\_\_. (C.O.NO. 2) [Knowledge]

a) Total float b) Free float

c) Independent float d) Interference float

2. According to the life cycle path of a project in general; Maximum level of effort is required in which phase of the project life cycle? (C.O.NO. 1) [Knowledge]

 a) Conceptualization b) Planning

 c) Execution d) Termination

3. The correct order of life cycle of a project is \_\_\_\_\_\_\_\_\_\_\_. (C.O.NO. 1) [Knowledge]

a) Conceptualization🡪Planning🡪 Execution🡪Termination

b) Planning 🡪 Conceptualization 🡪 Execution🡪Termination

c) Execution 🡪 Conceptualization🡪Planning🡪Termination

 d) Conceptualization🡪 Execution 🡪 Planning🡪 Termination

4. Which of the following is not the rule to be followed in preparation of work breakdown structure.

 a) Include 100% of the work necessary to complete the goal. (C.O.NO. 2) [Knowledge]

 b) A work package should take no less than 8 hours and no more than 80 hours of effort.

 c) All work package should be represented in sequence of execution.

 d) Don't account for any amount of work twice. (Mutually exclusive)

5. The longest time estimate in which an activity can be achieved by considering all the possible uncertainties is known as \_\_\_\_\_\_\_\_. (C.O.NO. 2) [Knowledge]

 a) Pessimistic time estimate b) Optimistic time estimate

 c) Expected time d) most likely time estimate

6. In the process of reducing the project duration the indirect costs of the project will \_\_\_\_\_\_\_\_\_\_. (C.O.NO. 3) [Knowledge]

a) Decrease b) Remain same

c) Increase d) Increase initially and then decrease.

7. In earned value analysis we can conclude that the project is over budget if \_\_\_\_\_\_\_\_\_\_\_. (C.O.NO. 3) [Knowledge]

 a) Schedule variance is positive b) CPI is greater than 1

 c) Cost variance is positive d) Cost variance is negative

8. Activities D, E, and F are the immediate successor activities for B activity. If the Late start time for these three activities are 21, 23, and 27, then what will be the late finish time for B while performing backward pass in network analysis? (C.O.NO. 2) [Knowledge]

a) 21 b) 27

c) 23 d) 25

9. A quality assurance program may include \_\_\_\_\_\_\_\_\_\_\_. (C.O.NO. 3) [Knowledge]

 a) Training program for workers

 b) Procuring good quality material

 c) Incentive or reward program for good quality work

 d) All of the above

10. \_\_\_\_\_\_\_\_\_\_\_\_ is the term related to the parameters with respect to which quality control processes are measured. (C.O.NO. 3) [Knowledge]

a) Quality economics b) Quality checks

c) Quality characteristics d) none of the above

**Part B [Thought Provoking Questions]**

**Answer all the Questions. (5Qx10M=50M)**

11. You have been assigned to take up a project, as a project management professional who is expected to manage a project efficiently it is important for you to know the various phases of the project. Enlist and explain various phases in life cycle of a project (including all the activities performed and reports prepared in individual phases). (C.O.NO.1) [Comprehension]

12. Planning techniques have evolved over time and have become sophisticated. Initially planning was done using basic calendars, to do lists etc, which were easier to plan but difficult to track the progress. Henry Gantt introduced Gantt chart which is accepted as a widely used tool for planning, scheduling and tracking project progress. Explain Gantt chart with the help of a neat diagram, delineate its advantages and disadvantages (C.O.NO.2) [Comprehension]

13. Project crashing refers to the process of shortening the duration of the project by reducing the duration of a number of activities. It is done in order to meet project deadlines or to fast-track the project that has been delayed. Describe the terms crash cost and crash duration for an activity. Explain the variation of costs of project during crashing with the help of a curve. (C.O.NO.3) [Comprehension]

14. Earned Value Analysis is a tool used for analyzing the status/progress of the project during execution. A project has been started 12 months ago, it has incurred a cost of Rs.15 Lakhs to complete 40% of the work whereas the Allocated cost in the budget for 40% work was Rs. 13 Lakhs. According to the time schedule, in 12 months 43% of project was planned to be completed at a budgeted cost of Rs. 14 Lakhs. Comment on the status of the project using various metrics of Earned value analysis. (C.O.NO.3) [Comprehension]

15. Quality management is required to ensure that all project activities that are necessary to design, plan and implement a project are effective with respect to the purpose of the objective and its performance. Explain the following terms with respect to Quality management.

a) Quality characteristics b) Quality assurance

c) Quality control d) Quality improvement (C.O.NO.3) [Comprehension]

**Part C [Problem Solving Questions]**

**Answer both the Questions. (2Qx15M=30M)**

16. Details of a project consisting of 9 activities is given in Table below. As a planning manager you are asked to determine the time duration required to complete this project and critical activities of project. Prepare a network diagram and furnish the required deliverables. Also, Prepare a representative Gantt chart for the project and Determine total float, free float, independent float and interference float of all non-critical activities. (C.O.No. 2) [Application]

|  |  |  |
| --- | --- | --- |
| **Activity** | **Predecessor** | **Time (weeks)** |
| A | - | 2 |
| B | - | 3 |
| C | A | 2 |
| D | A,B | 4 |
| E | C | 4 |
| F | C | 3 |
| G | D,E | 5 |
| H | F,G | 2 |

 17. PERT analysis is a planning technique with the probabilistic approach which accounts for uncertainties associated with every activity. Table below has details of a project having various time estimates for activities involved in the project. (C.O.No.2) [Application]

1. Determine expected duration of activities and mean value of project duration.
2. Calculate the probability of completing the project within 30 weeks.
3. Determine the deadline with risk of non-completion being 32%.

|  |  |  |
| --- | --- | --- |
| Activity code | Predecessor activity code | Time estimates (in weeks) |
| Optimistic | Most Likely | Pessimistic |
| A | None | 2 | 4 | 12 |
| B | None | 10 | 12 | 26 |
| C | A | 8 | 9 | 10 |
| D | A | 10 | 15 | 20 |
| E | A | 7 | 7.5 | 11 |
| F | B,C | 9 | 9 | 9 |
| G | D | 3 | 4 | 5 |
| H | E,F,G | 5 | 5 | 5 |

