**Prompt 1**

Now I would like to ask you to help me solve a project scheduling problem. We are going to use the critical path method. First, I will provide you with some project information described by natural language and tables.

**Prompt 2**

Here is information about the tasks for the production of MiC modules in the MiC project. This includes the task number, task name, task duration, task resource requirements, and each task's predecessor tasks. Specific details are as follows. Based on this information, please use the critical path method to calculate the project schedule. Each task is started as early as possible, and the critical path method does not require resources to be considered. And the start time and end time results of each task are given in tabular form. There is no need to describe the process, only the final calculation result needs to be given.

Resource available: 100

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| No. | Task | Durations (Day) | Resource demand | Predecessor |
| 1 | IPA30 BD submission & approval | 566 | 20 | N/A |
| 2 | MiC Drawing BD Submission | 211 | 30 | 1 |
| 3 | MiC Shop Drawing Submission | 179 | 30 | 1 |
| 4 | Material submission | 179 | 50 | 1 |
| 5 | Drawing submission | 59 | 30 | 2,3,4 |
| 6 | Fabrication of Mock Up | 89 | 60 | 5 |
| 7 | Off-site mock up set up and installation | 67 | 70 | 6 |
| 8 | Concrete Slab | 95 | 20 | 7 |
| 9 | Steel Structural Frame | 103 | 30 | 8 |
| 10 | FFR Material, Walls, installation | 50 | 60 | 9 |
| 11 | Window & Door, Fit out and E&M installation, | 53 | 40 | 9 |
| 12 | Module Ready for Delivery to Hong Kong | 1 | 20 | 10,11 |

**Prompt 3**

Now I would like to ask you to answer the following questions based on the calculation results. Please give the results directly without any explanation.

1. What is the critical path length?
2. How many tasks are there on the critical path?
3. What are the tasks on the critical path?
4. If the duration of task 7 Off-site mock up set up and installation is shortened, can the total project duration be shortened?
5. If the duration of task 10 FFR Material, Walls, installation is shortened, can the total duration of the project be shortened?

**Answers:**

1.

2.

3.

4.

5.