

## Assignment 2

Course Code (Name) : BM301 (Production and Operations Management)

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**Course Covered** : Project Management

**Instructions** : Attempt all questions on your own at the first instance. If you cannot do them on your own, you are free to take help of your batch mates or your course instructor. The assignments need not be submitted but the course instructor reserves the right to ask for the solutions any time.

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1. A Government Project has 14 activities starting from A through N. Construct the network diagram for the below given relationships:

- |   |                                       |
|---|---------------------------------------|
| ① A is the first operation              | ① H cannot start until E is completed |
| ① N is the last operation               | ① I and J succeed G                   |
| ① B and C can be performed parallelly   | ① F and J precede K                   |
| ① B and C are immediate successors to A | ① H and I precede L                   |
| ① D, E and F follow B                   | ① M succeeds L and K                  |
| ① G follows E                           | ① N succeeds M and C                  |

2. A project was planned using PERT with three time estimates. The expected completion time of the project was determined to be 40 weeks. The variance of the critical path is 9. The project manager wishes to set the due date for the completion of the project so that there is a 90% chance of finishing on schedule. Thus, there would only be a 10% chance the project would take longer than this due date. What should this due date be?

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- ✓ Take a bag with you whenever you go shopping to the market. That way, you avoid bringing polybags which ultimately finds its way to the waste basket. These are not bio-degradable and harm the environment.
  - ✓ Take the print out of this assignment in a paper which is already used on one side. This can help save paper and associated costs. In fact, make it a habit to always use papers to the optimum. Even envelopes just thrown away can be used to do rough work.
  - ✓ Check to see that all electrical appliances are switched off when they are not being used. Switch to CFLs. You can do a lot to save power.
  - ✓ Make it fashionable to be environmentally conscious and aware. You can make a real difference to the only place we have to live called EARTH.
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### How PERT and CPM started?

Managers have been planning, scheduling, monitoring, and controlling large-scale projects since ages, but it has only been in the past 50 years that QA techniques have been applied to major projects. One of the earliest techniques was the *Gantt Chart*. In 1957, the Critical Path Method (CPM) was developed by J E Kelly of Remington Rand and M R Walker of du Pont. Originally, CPM was used to assist in the building and maintenance of chemical plants at du Pont. A year later, in 1958, the Special Projects Office of the US Navy developed the Program Evaluation and Review Technique (PERT) to plan and control the Polaris Missile Program. This project involved the coordination of thousands of contractors involved with the Missile Program