**Mid-Term Examination (19-01-2022)**
**Class: B.E. (chemical)-MBA 3rd Semester**

**Subject: Operation Research**

**Max. Marks: 25** **Time allowed: 1hr**

**Note:** Attempt all questions

(1) In a game of matching coins, player A wins Rs.2 if there are two heads, wins nothing if there are two tails and loses Rs. 1, when there are one head and one tail. Determine the payoff matrix, best strategies of each player and the value of game to A.

**CO4** (5)

(2) Write any four limitation of game theory. Solve the following 2x5 game by graphical method

| | | Player B | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| Player A $x_1$ | 1 | -5 | 5 | 0 | -1 | 8 |
| $x_2 = 1 - x_1$ | 2 | 8 | -4 | -1 | 6 | -5 |

**CO4** (10)

(3) Train arrive at the yard every 15 minutes and the service time is 33 minutes. If the line capacity of the yard is limited to 4 trains, find

(i) the probability that the yard is empty

(ii) the average number of trains in the system **CO4** (5)

(4) State the assumptions underlying the basic EOQ formula.

**CO4** (5)