

IIT GUWAHATI
DEPARTMENT OF CSE
End Semester Examination

CS202/CS533 DISCRETE MATHEMATICS

FEBRUARY 6, 2024

Time: 09:00am-12:00pm

Max Marks: 100

Name

Sign

Roll

Invigilator

INSTRUCTIONS

- This question paper has **x** pages and **y** questions.
- All the answers are to be bubbled on the Answer Sheet.
- No questions about the paper will be entertained during the exam.
- You may use the supplementary sheets for the rough work. Answers written / continued on the supplementary sheets will **not** be evaluated. Do not attach your rough work/ supplementary sheets.
- It is suggested that you use a black ball point pen.

MULTIPLE CHOICE QUESTIONS

Question 1 [pv] How are you?

- ☒ Rene Coty
☐ Alain Prost
☐ Marcel Proust
☐ Claude Monet

Question 2 [pgf] ♣ Among the following cities, which ones are French prefectures?

- ☒ Poitiers
☐ Sainte-Menehould
☒ Avignon
☐ *None of these answers are correct.*

Question 3 [n3tge] How many different states were members of the European Union in Jan. 2009?

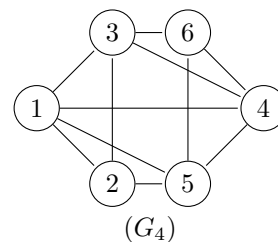
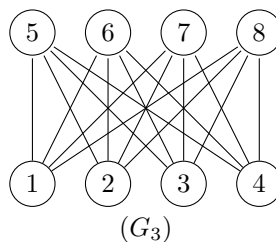
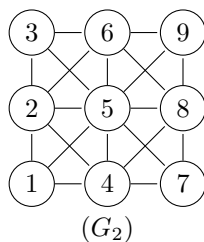
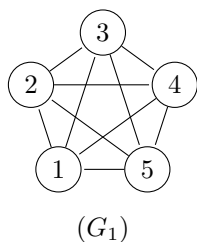
- ☐ 15 ☐ 21 ☐ 25 ☒ 27 ☐ 31

OTHER QUESTIONS

Question 4 [q41] Let $G = (V, E)$ be a graph such that $|V| = 7$ and $|E| = 16$. Which of the following statements are true?

- ☒ G connected. ☐ G has a perfect matching.
☐ G is planar.
☐ G is Eulerian ☐ *None of these answers are correct.*

Question 5 [44] Which of the graphs given below are planar?

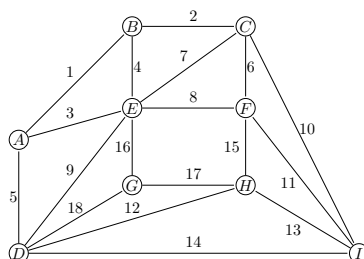


☐ G_1
☐ G_2

☐ G_3
☐ G_4

☐ None of these answers are correct.

Question 6 [45] Consider the graph G given below. The numbers on each edge denotes the *weight* of the corresponding edge. The weight of an edge e is denoted by $w(e)$. The *weight of a graph* is defined to be $\sum_{e \in E} w(e)$. Let T be a least weighted connected subgraph of G containing 9 vertices. Which of the following statements are true?



☐ T contains exactly 8 edges
☐ T doesn't contain the edge (G, D)
☐ T does contain the edge (A, B)

☐ T is not bipartite.

☐ None of these answers are correct.

ANSWER SHEET

Get the invigilator's help to know your UID. Invigilator's Sign :

STUDENT INFORMATION

Please bubble your UID.

Name

0123456789

UID.....Roll

0123456789

Email.....

0123456789

RESPONSES

Q 1: ☐ ☐B☐C☐D

Q 4: ☐ ☐B☐C☐D☐E

Q 2: ☐ ☐B☐ ☐D

Q 5: ☐A☐ ☐C☐ ☐E

Q 3: ☐A☐B☐C☐ ☐E

Q 6: ☐ ☐ ☐D☐E

PLEASE DO NOT WRITE ANYTHING ON THE OTHER
SIDE OF THE ANSWER SHEET.

CATALOG