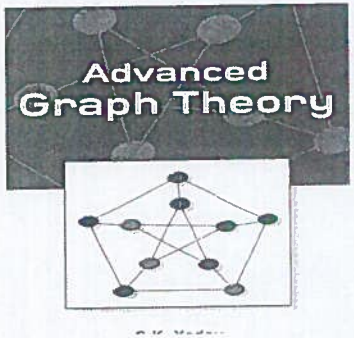
RISE KRISHNA SAI GANDHI GROUP OF INSTUTIONS:ONGOLE

Certificate program
on



"ADVANCED GRAPH THEORY"

22th AUG 2020 TO 26th AUG 2020

Mr. M. Siva prasanth,
Working as Freelancer Trainer at State Head for Corporate Communication

ORGANIZED BY

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

PRINCIPAL
RISE KRISHNA SAI GANDHI
GROUP OF INSTITUTIONS
VALLURU:: ONGOLE.

RISE KRISHNA SAI GANDHI GROUP OF INSTITUTIONS
(Approved by AICTE-NEW DELHI, Affiliated to JNTUK KAKINADA)
NH-16, Valluru -523272, Ongole, Prakasam District. A.P. India.

Department of Computer Science & Engineering

Date: 18-08-2020,
Valluru,

To

Mr. M. Siva prasanth,

Freelancer Trainer,

9677879862.

Dear Sir,

Subject: A letter of invitation to conduct a five day certificate program on "ADVANCED GRAPH THEORY"- Reg..

---o---

Greetings from RISE Krishna Sai Gandhi Group of Institutions, Ongole

The RISE Institutions started functioning from the academic year 2009-10 and offering certificate p[rogram in several engineering branches namely CE, CSE, ECE,.

As per the discussion over phone, I hereby take this opportunity to invite you to take Certificate program classes on "ADANCED GRAPH THEORY" from 22-08-20 to 26-08-2020.

You are requested to interact and provide guidance to our II CSE B.Tech Students, who are looking forward to their bright career ahead. I will feel honored by your gracious presence at our organization. I believe that your lecture will help our students and faculty members to explore knowledge.

Thanking you in anticipation.

Yours sincerely,

Principal

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A FIVE DAY CERTIFICATE PROGRAMME ON "ADVANCED GRAPH THEORY"

22th – 26th Aug, 2020.

Coordinator

Mr.CH. SITA RAM
Asst.Prof.

Organized by

Department of Computer Science & Engineering

RISE KRISHNA SAI GANDHI GROUP OF INSTITUTIONS

(Approved By AICTE-NEW DELHI, Affiliated To JNTUK KAKINADA)
NH-16, Valluru, Ongole,
Prakasam District, A.P-523272
Phone : +91 99662 72111
mail id : rise_gandhi@yahoo.com

ORGANIZING COMMITTEE

Chief Patrons

Sri SIDDA. VENKATESWARA RAO
Chairman

Sri I.C. RANGAMANNAR
Hon'ble Chairman

Sri SIDDA. HANUMANTHA RAO
Secretary

Sri SIDDA. BHARATH
Treasurer

Patron

Prof. Dr. K.V.SUBRAHMANYAM
M. Tech, Ph. D. ,
Principal

Coordinator

Mr .CH. SITA RAM
Asst.prof.

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STUDENT REGISTRATION FORM

Name : .....

Gender : .....

Department : .....

Institution : .....

Address for Communication.

.....

.....

.....

PIN :.....

EMAIL :.....

MOBILE NO. : .....

About RISE:-

RISE KRISHNA SAI Gandhi Group of Institutions is located in the outer suburb of the calm town, Ongole in Prakasam district in Andhra Pradesh. RISE KRISHNA SAI GANDHI Group of Institutions offers unparalleled Engineering, Management and Computer Education.

The most competent and dedicated technical and human resources in the campus sharpen students and their skills. They, thereby, shall be sure to make the greatest possible strides both in their career and life!

The Institution was established on 5th October 2009 by RISE which stands for Rural Institute of Social and Economic Empowerment.

The institution is approved by AICTE, New Delhi and Govt. of Andhra Pradesh and is affiliated to Jawaharlal Nehru Technological University, Kakinada (JNTUK).

This world class institute with global standards offers courses at the Undergraduate levelin five areas (CE, ME, EEE, ECE, CSE) ofengineering, at the Post Graduate level in two areas(MBA & MCA)

About Department:-

The department of Computer Science and Engineering was established in 2009 with an intake of 60 students in the UG programmer.

The intake was enhanced to 120 in 2010 with highly qualified and experienced faculty and has good infrastructural facilities and is equipped with full-fledged laboratories. The department also has audiovisual facilities with sufficient LCD and OHP's for effective teaching.

The staff members are deputed to participate in workshops, conferences and refresher courses to keep in pace with recent developments in the field of Computer Science & Engineering.

Objectives of the Programme:-

Advanced Graph Theory focuses on problem solving using the most important nations of Graph theory with an in-depth study of concepts on the applications in the field of the computer science.

This course provides an in-depth understanding of graphs and fundamental principles and models underlying the theory , algorithms , and proof techniques in the fiels of the Graph Theory.

Course Contents:-

Graph Theory: Introduction Paths, Cycles, and Trails Eulerian Circuits, Vertex Degrees and Counting

The Chinese Postman Problem and Graphic Sequences Trees and Distance Spanning Trees and Enumeration Matchings and covers Independent Sets, Covers and Maximum Bipartite Matching Weighted Bipartite Matching Stable Matchings and Factors & Perfect Matching in General Graphs Matching in General Graphs: Edmonds Blossom Algorithm Connectivity and Paths: Cuts and Connectivity k-Connected Graphs Network Flow Problems Vertex Coloring and Upper Bounds Brooks Theorem and Color-Critical Graphs Counting Proper Colorings

Planar Graphs Characterization of Planar Graphs Line Graphs and Edge-coloring Hamiltonian Graph, Traveling Salesman Problem and NP-Completeness

Connected Dominating Set and Distributed Algorithm

- Matching
- Connectivity and edge
- Independence and Coverning
- Labelings
- Perfect Graphs

Graph Theory challenges Algorithms:-

- Synchronous Shopping
- Subset component
- Snakes and ladders
- Dijkstra's Algorithm
- Kruskal's MST
- Breadth First Search(Shortest path)

Resource Person:-

Mr. M. Siva Prasanth., Working as Freelancer Trainer at State Head for Corporate Communication.
Ph.no: 9677879862.

Guidelines:-

No participant fee will be collected.
Session time will be from 9:00AM to 5:00PM.

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NH-16, Valluru -523272, Ongole, Prakasam District, A.P, India.

Department of Computer Science and Engineering

PROPOSAL FORM

SUB: 5 Day certificate program on " ADVANCED GRAPH THEORY " –Programme

To the Secretary/Correspondent through Principal for Kind Approval

1	Name of the Institution	**RISE Krishna Sai Gandhi Group of Institutions**
2	Name of the Department	Computer Science and Engineering
3	Title of the Programme	5 Day certificate program
4	Topic of the Programme	Certificate program on **"ADVANCED GRAPH THEORY"**
5	Objective of the Programme	To bring the exposure in the recent advancements in the subject
6	Details of Resource Person(s) & CV Attached.	Mr. M. Siva prasanth, Freelancer Trainer, 9677879862.
7	Proposed Date(S)/Academic Year	22-08-2020 TO 26-08-2020
8	Duration of the Programme	5 Days
9	Venue	Seminar Hall
10	Target	II- CSE-1 & II-CSE-2
11	Number of Participants	109 students
12	Registration Fee	NIL
13	Name of Programme Coordinator(s)	Mr. CH.SITA RAM
14	Name of the Students Coordinator(s)	1. BANDI HARITHA(198B1A0558) 2. MIDASALA SRUTHI (198B1A0569)

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		3. NALLURI ANIL KUMAR(198B1A0597) 4. VAKA ROHITH (198B1A05A8)
15	Source of Fund Identified	Management
16	Management Contribution Required	YES /NO
17	Name of Budgetary Members	1. Mr. P.ISAAC PAUL (HOD) 2. Mr.CH.SITA RAM (Coordinator)

SUBMITTED BY

HOD

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NH-16, Valluru -523272, Ongole, Prakasam District, A.P, India.

Department of Computer Science & Engineering

Date: 20-08-2020,
Valluru,

CIRCULAR

This is to inform II-B.Tech students and faculty that there will be a 5-Day Certificate program on "ADVANCED GRAPH THEORY" from 22-08-2020 to 26-08-2020 by M. Siva Prasanth, Working as Freelancer Trainer at State Head for Corporate communication.

Professor and HOD
HEAD OF THE DEPARTMENT
Department of CSE
RISE Krishna Sai Gandhi Group of Institutions,VALLUR,A.P.-523 272

Copy to:

Principal

Staff Circular

Students of CSE II year

CSE Department Notice Boards

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Department of Computer Science & Engineering

Schedule for "ADVANCED GRAPH THEORY"

S. No	Date	Time	Topic Covered
1	22-08-2020	9.00am to 10.00am	Opening ceremony
		10.00am to 12.40pm	Graph Theory: Introduction, Paths, Cycles, and Trails
		Lunch	
		1.20pm to 5.00pm	Eulerian Circuits, Vertex Degrees and Counting
2	23-08-2020	9.00am to 12.40pm	The Chinese Postman Problem and Graphic Sequences Trees and Distance Spanning Trees and Enumeration
		Lunch	
		1.20pm to 5.00pm	Matchings and covers Independent Sets, Covers and Maximum Bipartite Matching
3	24-08-2020	9.00am to 12.40pm	Weighted Bipartite Matching Stable Matchings and Faster Bipartite Matching Factors & Perfect Matching in General Graphs
		Lunch	
		1.20pm to 5.00pm	Matching in General Graphs: Edmonds Blossom Algorithm Connectivity and Paths: Cuts and Connectivity

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4	25-08-2020	9.00am to 12.40pm	k-Connected Graphs Network Flow Problems Vertex Coloring and Upper Bounds
		Lunch	
		1.20pm to 5.00pm	Brooks Theorem and Color-Critical Graphs Counting Proper Colorings
5	26-08-2020	9.00am to 12.40pm	Planar Graphs Characterization of Planar Graphs
		Lunch	
		1.20pm to 5.00pm	Line Graphs and Edge-coloring Hamiltonian Graph, Traveling Salesman Problem and NP Completeness Connected Dominating Set and Distributed Algorithm
		4.00pm to 5.00pm	Closing Ceremony

Coordinator

HOD
HEAD OF THE DEPARTMENT
Department of CSE
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT FEED BACK FORM

NAME OF THE STUDENT : B. sisindori DATE: 26/3/2021

ROLL NO : 19BB1A0534 A.Y: 2020 – 21

PROGRAMME NAME : Advanced Graph theory

S.NO	FEED BACK POINTS	1	2	3	4	5
1	Is the Programme useful or not?					✓
2	Is the Programme well planned or not?				✓	
3	Programme makes objectives clear?					✓
4	Programme speaker speaks clearly and audibly?					✓
5	Speaker explains with examples clearly?					✓
6	Is your Doubts clarified or not?					✓

5-EXCELLENT 4-GOOD 3-AVERAGE 2-POOR 1-NO COMMENT

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT FEED BACK FORM

NAME OF THE STUDENT : K. Haseena
DATE: 26-03-21
ROLL NO : 198B1A0516
A.Y: 2020-21
PROGRAMME NAME : Advanced Graph Theory

S.NO	FEED BACK POINTS	1	2	3	4	5
1	Is the Programme useful or not?				✓	
2	Is the Programme well planned or not?					✓
3	Programme makes objectives clear?				✓	
4	Programme speaker speaks clearly and audibly?					✓
5	Speaker explains with examples clearly?					✓
6	Is your Doubts clarified or not?					✓

5-EXCELLENT 4-GOOD 3-AVERAGE 2-POOR 1-NO COMMENT

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT FEED BACK FORM

NAME OF THE STUDENT : B. Gowri lakshmi DATE: 26/03/2021
ROLL NO : 19B31A0575 A.Y: 2020-21
PROGRAMME NAME : Advanced graph Theory

S.NO	FEED BACK POINTS	1	2	3	4	5
1	Is the Programme useful or not?				✓	
2	Is the Programme well planned or not?					✓
3	Programme makes objectives clear?					✓
4	Programme speaker speaks clearly and audibly?					✓
5	Speaker explains with examples clearly?					✓
6	Is your Doubts clarified or not?					✓

5-EXCELLENT 4-GOOD 3-AVERAGE 2-POOR 1-NO COMMENT

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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

STUDENT FEED BACK FORM

NAME OF THE STUDENT : N. Anil Kumar. DATE: 26.03.2021

ROLL NO : 19B81A0597. A.Y: 2020-21.

PROGRAMME NAME : Advanced graph theory.

S.NO	FEED BACK POINTS	1	2	3	4	5
1	Is the Programme useful or not?					✓
2	Is the Programme well planned or not?					✓
3	Programme makes objectives clear?					✓
4	Programme speaker speaks clearly and audibly?					✓
5	Speaker explains with examples clearly?					✓
6	Is your Doubts clarified or not?					✓

5-EXCELLENT 4-GOOD 3-AVERAGE 2-POOR 1-NO COMMENT

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DEPARTMENT OF COMPUTER SCIENCE

FEEDBACK ANALYSIS

A.Y: 2020-2021 **Year : II B.Tech CSE** **Date: 26-03-2021**

Certificate Program on "ADVANCED GRAPH THEORY"

S.No	Roll Number	Name	1	2	3	4	5	6
1	198B1A0501	AKKALA PAVANI REDDY	4	4	5	5	4	5
2	198B1A0502	ANALA JAYA SRENIKA	5	4	4	5	5	4
3	198B1A0503	ANUMULA ANJALI	4	4	5	4	4	5
4	198B1A0505	BUDDULA KELITA JOVEL	4	5	5	4	5	4
5	198B1A0506	CHANDRAGIRI SIVANI	4	4	4	5	5	5
6	198B1A0507	CHAVA LAKSHMI SIVANI	5	4	5	4	5	5
7	198B1A0508	CHENNAMSETTY VENKATA LAKSHMI	5	4	5	5	5	4
8	198B1A0509	CHEVUTURI VISHNAVI	4	5	4	5	5	5
9	198B1A0510	DONTHIREDDY SNEHA LATHA REDDY	4	4	5	4	4	4
10	198B1A0511	GHORAKAVI VENKATA LAKSHMI SRAVANTHI	5	5	5	4	4	5
11	198B1A0512	GOPIREDDY VARSHITHA SAI	4	4	5	4	5	5
12	198B1A0513	GUDISA MOUNIKA	4	5	4	5	5	4
13	198B1A0514	IRAGALA NANDINI	4	4	5	5	5	5
14	198B1A0515	JASTI ANJALI DEVI	5	5	5	5	5	5
15	198B1A0516	KAKARLA HASEENA	4	5	4	5	5	5

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16	198B1A0517	KAMUJULA LAKSHMI PRIYANKA	4	4	5	4	5	4
17	198B1A0518	KODURI BINDU	4	4	5	4	4	5
18	198B1A0519	KOTA VENKATA SATYA AHALYA	5	4	4	5	4	5
19	198B1A0520	MARAM AKHILA	4	5	5	4	5	4
20	198B1A0521	MEDAGAM ABHINAYA	4	4	5	4	5	5
21	198B1A0522	MYLAVARAPU VINITHA	4	5	5	4	5	5
22	198B1A0523	NADENDLA SAI PUJITHA	4	4	5	5	5	5
23	198B1A0524	PACHIPULUSU VASANTHI	5	5	4	4	5	4
24	198B1A0525	PATHI DURGA DEVI	4	5	5	4	5	5
25	198B1A0526	RAYAPATI POOJITHA	5	4	5	5	4	4
26	198B1A0527	SHAIK HEENA THAKDEES	5	5	4	5	5	5
27	198B1A0528	SHAIK MOBEENA	5	4	5	4	4	4
28	198B1A0529	SOMARAJUPALLI NAGA SRAVANI	5	5	5	4	4	5
29	198B1A0530	TALLAPANENI SNEHA LATHA	5	4	5	4	4	5
30	198B1A0531	VAYIGANDLA PADMA SAI	4	5	5	4	4	4
31	198B1A0532	YEKAMBARAM SREELEKHA	5	4	5	4	5	5
32	198B1A0533	BATHULA PAVAN KALYAN	5	4	4	5	5	5
33	198B1A0534	BATTU SISINDRI	5	4	5	5	5	5
34	198B1A0535	BATTULA PRAVEEN KUMAR	5	5	5	5	5	4
35	198B1A0536	BODAPATI VINOD	5	4	4	4	4	5
36	198B1A0537	CHALLA AJAY VARMA	5	5	5	5	5	5

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37	198B1A0538	CHENNAMSETTY NARESH	5	4	5	5	4	5
38	198B1A0539	GANGADI DEEPAK	5	4	5	5	5	4
39	198B1A0540	INDRA LINGESWARA REDDY JETTY	5	5	4	4	4	5
40	198B1A0541	KOVURI RAJESH	4	4	5	4	5	5
41	198B1A0542	MARAM BHARGAVA REDDY	5	4	5	4	5	4
42	198B1A0543	NUNE HAREESWARA ASWINI KUMAR	5	4	5	4	5	5
43	198B1A0544	PALADUGU VENKATA SIVA SAI RAM	5	5	4	4	4	5
44	198B1A0545	PEDDINENI SAI MANOJ	5	5	4	5	4	5
45	198B1A0546	PINNAKA BALA VENKATA KISHORE CHOWDARY	5	4	4	4	5	4
46	198B1A0547	RAVINUTHALA SUMANTH	4	5	4	5	4	5
47	198B1A0548	SAGA RAVIKUMAR	5	4	4	4	5	5
48	198B1A0549	SHAIK SHABBIR	5	4	4	4	5	5
49	198B1A0550	SRI CHAKRAVARTI NALLURI	5	5	5	4	5	5
50	198B1A0551	TULABANDULA PRAVEEN	5	4	5	4	4	5
51	198B1A0552	VEMIREDDY RAMESH REDDY	5	4	5	4	5	4
52	198B1A0553	VENNA SIVANJI REDDY	4	5	5	5	4	5
53	198B1A0554	VISHNUVARDAN REDDY BADDELA	5	4	5	4	5	5
54	198B1A0555	AMARA KAVYA SREE	5	5	5	5	4	5
55	198B1A0556	AMARA SATYA LAKSHMI MANI ANASUYA	5	5	4	5	5	5
56	198B1A0557	BANDARU SIRISHA	5	5	5	5	5	4
57	198B1A0558	BANDI HARITHA	5	4	5	5	5	4

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58	198B1A0559	BEERALA VENKATA ANJANI	5	5	5	4	5	4
59	198B1A0560	CHINTHAPALLI SAI RAJASWINI	5	4	4	5	5	5
60	198B1A0561	CHITTA DURGA BHAVANI	5	5	5	5	5	5
61	198B1A0562	CHITTA SUPRIYA	4	4	5	5	4	4
62	198B1A0563	GUDURI RUCHITHA	5	4	5	4	5	5
63	198B1A0564	GUNAPANENI MADHURI	5	4	5	4	5	5
64	198B1A0565	KAKARLA VANAJA	5	4	5	5	5	5
65	198B1A0566	KHAREEDU SAILAJA	5	4	5	4	5	5
66	198B1A0567	KOTA LAKSHMI SUPRAJA	5	4	5	4	5	5
67	198B1A0568	MADDA PRAGATHI	5	4	5	4	5	5
68	198B1A0569	MIDASALA SRUTHI	5	4	4	4	5	5
69	198B1A0570	MOTAPOTULA NAGA POOJITHA	5	4	5	4	5	5
70	198B1A0571	MULAGANI LAKSHMICHARANYA	5	5	5	5	5	5
71	198B1A0572	MUVVALA VENKATA SAI SREEYA	5	5	5	4	5	5
72	198B1A0573	NAGASURI LAKSHMI DEEPIKA	5	4	4	4	5	5
73	198B1A0574	NAVULURI KEERTHANA	5	4	5	4	5	5
74	198B1A0575	PADARTHI GOWRI LAKSHMI	4	5	5	5	5	5
75	198B1A0576	PALURI HEMANJALI	5	5	5	5	5	5
76	198B1A0577	PEDANABOINA NANDINI	5	4	5	4	5	5
77	198B1A0578	POKURI N V L GODHA SRAVANI	5	5	5	5	5	5

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78	198B1A0579	POKURI SREEVALLI	5	4	5	4	5	5
79	198B1A0580	RANGU GOWRI BHARGAVI	5	5	5	4	5	4
80	198B1A0581	SEELAM SAI PRAVALLIKA	5	5	4	5	5	5
81	198B1A0582	SHAIK JABINA	5	4	5	5	5	4
82	198B1A0583	VENNAPUSA THRIVENI	5	5	5	4	4	5
83	198B1A0584	VIKRAM MOUNIKA	5	4	5	4	5	4
84	198B1A0585	YALLAVULA MADHURI	4	5	4	5	4	5
85	198B1A0586	ALAPATI SAI BHARGAV	4	5	5	5	5	4
86	198B1A0587	DASARI HARSHAVARDHAN	5	4	4	5	5	5
87	198B1A0588	DEVULAPALLI NRUSHIMHA	4	4	5	4	5	5
88	198B1A0589	DHULIPALLA DANA RAO	5	5	5	4	5	5
89	198B1A0590	GADDE MANIKANTA	4	5	5	5	5	5
90	198B1A0591	IDAVALAPATI BHARGAV RAM	5	5	5	5	4	4
91	198B1A0592	INDRAGANTI MANIDEEPAK	4	5	4	5	4	5
92	198B1A0593	KANDUKURI SURENDRA	5	5	5	5	5	5
93	198B1A0594	MARELLA SRINIVASA RAO	4	4	5	4	4	4
94	198B1A0595	MEDIKONDA VENKATA SIVA RAMAKRISHNA	5	4	5	5	5	4
95	198B1A0596	MOHAMMED YOUNUS AHAMED	5	5	4	4	4	5
96	198B1A0597	NALLURI ANIL KUMAR	5	5	5	5	5	5

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97	198B1A0598	NANABALA RANGANADH	4	5	5	5	4	5
98	198B1A0599	NEKKANTI VENKATA SAIKUMAR	4	5	5	4	5	4
99	198B1A05A0	PASUPULETI KALYAN	5	4	4	5	5	5
100	198B1A05A1	REGULA NARENDRA BABU	4	5	5	5	5	5
101	198B1A05A2	RACHAPUDI AKHIL AKASH MANI KANTA	5	5	4	4	5	5
102	198B1A05A3	RAJARAPU VENKATA GURUMURTHY	4	5	5	5	5	5
103	198B1A05A4	SRUNGARAPU SAI AVINASH NAIDU	5	4	5	5	4	4
104	198B1A05A5	SUNNAM SAI VARUN KUMAR	4	5	4	5	4	5
105	198B1A05A6	THOTAPALLI PURNA SATYA KARTHEEK	5	4	5	5	4	5
106	198B1A05A7	THUMATI VENKATA GOPI	4	5	5	4	4	4
107	198B1A05A8	VAKA ROHITH	5	4	5	5	4	4
108	198B1A05A9	YAGANTI PAVAN KUMAR	4	5	4	5	4	4
109	208B5A0501	PAPANABOINA RADHA	5	4	4	5	4	4
			4.67	4.47	4.72	4.50	4.68	4.70
			93.39	89.36	94.31	90.09	93.58	93.94
			92.45					

Faculty coordinator

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HEAD OF THE DEPARTMENT
Department of CSE
RISE Krishna Sai Gandhi Group of
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(APPROVED BY AICTE-NEW DELHI, AFFILIATED TO JNTUK KAKINADA)
NH 16, Valluru 523272, Ongole, Prakasam (Dist), Andhra Pradesh, India

Department of Computer Science & Engineering

Certificate program Feedback Analysis

Topic : Certification program on" **ADVANCED GRAPH THEORY**"

Resource Person : Mr.M.Siva prasanth,

Working as Freelancer Trainer at State Head for Corporate communication

Dates : 22-08-2020 To 26-03-2020

Venue : Seminar Hall

Targeted Students : II Year students

S.No	No. of students Participated	No. of students given feedback	Feedback %
1	109	109	100%

Coordinator

Head of the Department

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NH-16, Valluru -523272, Ongole, Prakasam District, A.P. India.

Department of Computer Science & Engineering

Certificate Program on "ADVANCED GRAPH THEORY"
Model Question Paper

Branch/Sem: II CSE/IISEM AY : 2020-2021

Student Name: RollNo:

1.A graph is a tree if and only if it [ ]

(A) is completely connected
(B) is planar
(C) contains a act
(D) is minimally connected

2.Tree [ ]
(A) is a connected graph
(B) with n nodes contains n – 1 edges
(C) is a bipartitc graph
(D) all of these

3.The number of paths between any pair of nodes in a tree on n nodes is [ ]
(A) o
(B) 1
(C) (n – 1)
(D) n

4.A graph G with n nodes is bipartite if it contains [ ]
(A) n^2 edges
(B) n edges
(C) a cycle of odd length
(D) no cycle of odd length

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5.A tree with n nodes has [ ]
(A) n/2 edges
(B) n edges
(C) n – 1 edges
(D) n + 1 edges

6.Which of the following algorithms solves the all pair shortest path problem? [ ]
(A) Floyd's algorithm
(B) Dijkstra's algorithm
(C) Warshall's algorithm
(D) Prim's algorithm

7.What transversal techniques list the nodes of a binary search tree in ascending order? [ ]
(A) Pre-order
(B) Post order
(C) In-order
(D) None of these

8.A complete binary tree with the property that the values of each node is at least as large as the values at its children is called [ ]
(A) AVL tree
(B) Binary search tree
(C) Heap
(D) Completely balanced tree

9.A circuit in a connected graph which includes every vertex of the graph is called [ ]
(A) Hamilton
(B) Cheque
(C) Universal
(D) Euler

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10.Which data structure is needed to convert infix notation to post fix notation? [ ]
(A) Queue
(B) Linear list
(C) Stack
(D) Tree

11.A graph in which all nodes are of equal degree is called [ ]
(A) Regular graph
(B) Multigraph
(C) Non regular graph
(D) Complete graph

12.A simple graph in which there exists an edge between every pair of vertices is called [ ]
(A) Eular graph
(B) Complete graph
(C) Planner graph
(D) Incomplete graph

13.Which of the following sorting method is stable? [ ]
(A) Straight insertion sort
(B) Heap sort
(C) Shell sort
(D) Binary insertion sort

14.Preorder is nothing but [ ]
(A) Linear order
(B) Topological order
(C) Breadth first order
(D) Depth first order

15.In which tree, for every node the height of its left sub tree and right sub tree differ at least by one? [ ]
(A) Threaded binary tree
(B) Binary search tree
(C) Complete tree

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(D) AVL tree

16.The terminal vertices of a path are of degree [ ]
(A) Zero
(B) One
(C) Two
(D) More than four

17.A graph with n vertices and n - 1 edges that is not a tree, is
(A) A circuit [ ]
(B) Euler
(C) Connected
(D) Disconnected

18.What is the true complexity of linear search algorithm over an array of n element? [ ]
(A) 0 (n)
(B) $O(n / \log_2 n)$
(C) $O(n^2)$
(D) $(\log_2 n)$

19.A vertex of degree one is called [ ]
(A) Colored vertex
(B) Null vertex
(C) Pendent
(D) Isolated vertex

20.A full binary tree with n leaves contains [ ]
(A) n nodes
(B) $\log_2 n$ nodes
(C) 2^{n+1} nodes
(D) 2^n

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KEY :

1. is minimally connected
2. all of these
3. 1
4. no cycle of odd length
5. n – 1 edges
6. Floyd's algorithm
7. In-order
8. Heap
9. Hamilton
10. Linear list
11. Regular Graph
12. Complete graph
13. Straight insertion sort
14. Depth first order
15. AVL tree
16. One
17. Disconnected
18. 0 (n)
19. Pendent
20. 2^{n+1} nodes

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NH-16, Valluru -523272, Ongole, Prakasam District, A.P. India.

Department of Computer Science & Engineering

Certificate Program on "ADVANCED GRAPH THEORY"
Model Question Paper

Branch/Sem: II CSE/IISEM AY : 2020-2021

Student Name: K.Bindu RollNo: 198B1A0518

20/20

1.A graph is a tree if and only if it [D]

(A) is completely connected
(B) is planar
(C) contains a act
(D) is minimally connected

2.Tree [D]
(A) is a connected graph
(B) with n nodes contains n – 1 edges
(C) is a bipartite graph
(D) all of these

3.The number of paths between any pair of nodes in a tree on n nodes is [B]
(A) o
(B) 1
(C) (n – 1)
(D) n

4.A graph G with n nodes is bipartite if it contains [D]
(A) n^2 edges
(B) n edges
(C) a cycle of odd length
(D) no cycle of odd length

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5.A tree with n nodes has [C]
(A) n/2 edges
(B) n edges
(C) n – 1 edges
(D) n + 1 edges

6.Which of the following algorithms solves the all pair shortest path problem? [A]
(A) Floyd's algorithm
(B) Dijkstra's algorithm
(C) Warshall's algorithm
(D) Prim's algorithm

7.What transversal techniques list the nodes of a binary search tree in ascending order? [C]
(A) Pre-order
(B) Post order
(C) In-order
(D) None of these

8.A complete binary tree with the property that the values of each node is at least as large as the values at its children is called [C]
(A) AVL tree
(B) Binary search tree
(C) Heap
(D) Completely balanced tree

9.A circuit in a connected graph which includes every vertex of the graph is called [A]
(A) Hamilton
(B) Cheque
(C) Universal
(D) Euler

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10.Which data structure is needed to convert infix notation to post fix notation? [C]
(A) Queue
(B) Linear list
(C) Stack
(D) Tree

11.A graph in which all nodes are of equal degree is called [A]
(A) Regular graph
(B) Multigraph
(C) Non regular graph
(D) Complete graph

12.A simple graph in which there exists an edge between every pair of vertices is called [B]
(A) Eular graph
(B) Complete graph
(C) Planner graph
(D) Incomplete graph

13.Which of the following sorting method is stable? [A]
(A) Straight insertion sort
(B) Heap sort
(C) Shell sort
(D) Binary insertion sort

14.Preorder is nothing but [D]
(A) Linear order
(B) Topological order
(C) Breadth first order
(D) Depth first order

15.In which tree, for every node the height of its left sub tree and right sub tree differ at least by one? [D]
(A) Threaded binary tree
(B) Binary search tree
(C) Complete tree

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(D) AVL tree

16.The terminal vertices of a path are of degree [B]
(A) Zero
(B) One
(C) Two
(D) More than four

17.A graph with n vertices and n - 1 edges that is not a tree, is
(A) A circuit [D]
(B) Euler
(C) Connected
(D) Disconnected

18.What is the true complexity of linear search algorithm over an array of n element? [A]
(A) 0 (n)
(B) $O(n / \log_2 n)$
(C) $O(n^2)$
(D) $(\log_2 n)$

19.A vertex of degree one is called [C]
(A) Colored vertex
(B) Null vertex
(C) Pendent
(D) Isolated vertex

20.A full binary tree with n leaves contains [C]
(A) n nodes
(B) $\log_2 n$ nodes
(C) 2^{n+1} nodes
(D) 2^n

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DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

BRANCH:CSE-II
YEAR : II-II

Academic year:2020-21

Certificate program on "ADVANCED GRAPH THEORY"

STUDENT ASSESSMENT SHEET

S.NO	ROLL NUMBERS	NAME OF THE STUDENT	MARKS
1	198B1A0555	AMARA KAVYA SREE	20
2	198B1A0556	AMARA SATYA LAKSHMI MANI ANASUYA	19
3	198B1A0557	BANDARU SIRISHA	20
4	198B1A0558	BANDI HARITHA	19
5	198B1A0559	BEERALA VENKATA ANJANI	19
6	198B1A0560	CHINTHAPALLI SAI RAJASWINI	20
7	198B1A0561	CHITTA DURGA BHAVANI	19
8	198B1A0562	CHITTA SUPRIYA	18
9	198B1A0563	GUDURI RUCHITHA	18
10	198B1A0564	GUNAPANENI MADHURI	19
11	198B1A0565	KAKARLA VANAJA	19
12	198B1A0566	KHAREEDU SAILAJA	19
13	198B1A0567	KOTA LAKSHMI SUPRAJA	17
14	198B1A0568	MADDA PRAGATHI	20
15	198B1A0569	MIDASALA SRUTHI	20
16	198B1A0570	MOTAPOTULA NAGA POOJITHA	19
17	198B1A0571	MULAGANI LAKSHMICHARANYA	18
18	198B1A0572	MUVVALA VENKATA SAI SREEYA	17
19	198B1A0573	NAGASURI LAKSHMI DEEPIKA	18
20	198B1A0574	NAVULURI KEERTHANA	20
21	198B1A0575	PADARTHI GOWRI LAKSHMI	20
22	198B1A0576	PALURI HEMANJALI	19
23	198B1A0577	PEDANABOINA NANDINI	19
24	198B1A0578	POKURI N V L GODHA SRAVANI	20
25	198B1A0579	POKURI SREEVALLI	17
26	198B1A0580	RANGU GOWRI BHARGAVI	19
27	198B1A0581	SEELAM SAI PRAVALLIKA	19
28	198B1A0582	SHAIK JABINA	19
29	198B1A0583	VENNAPUSA THRIVENI	18
30	198B1A0584	VIKRAM MOUNIKA	19
31	198B1A0585	YALLAVULA MADHURI	19
32	198B1A0586	ALAPATI SAI BHARGAV	19
33	198B1A0587	DASARI HARSHAVARDHAN	19
34	198B1A0588	DEVULAPALLI NRUSHIMHA	20
35	198B1A0589	DHULIPALLA DANA RAO	19
36	198B1A0590	GADDE MANIKANTA	19

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S.NO	ROLL NUMBERS	NAME OF THE STUDENT	MARKS
37	198B1A0591	IDAVALAPATI BHARGAV RAM	18
38	198B1A0592	INDRAGANTI MANIDEEPAK	20
39	198B1A0593	KANDUKURI SURENDRA	19
40	198B1A0594	MARELLA SRINIVASA RAO	20
41	198B1A0595	MEDIKONDA VENKATA SIVA RAMAKRISHNA	17
42	198B1A0596	MOHAMMED YOUNUS AHAMED	18
43	198B1A0597	NALLURI ANIL KUMAR	20
44	198B1A0598	NANABALA RANGANADH	18
45	198B1A0599	NEKKANTI VENKATA SAIKUMAR	18
46	198B1A05A0	PASUPULETI KALYAN	17
47	198B1A05A1	REGULA NARENDRA BABU	18
48	198B1A05A2	RACHAPUDI AKHIL AKASH MANI KANTA	18
49	198B1A05A3	RAJARAPU VENKATA GURUMURTHY	18
50	198B1A05A4	SRUNGARAPU SAI AVINASH NAIDU	18
51	198B1A05A5	SUNNAM SAI VARUN KUMAR	19
52	198B1A05A6	THOTAPALLI PURNA SATYA KARTHEEK	20
53	198B1A05A7	THUMATI VENKATA GOPI	18
54	198B1A05A8	VAKA ROHITH	18
55	198B1A05A9	YAGANTI PAVAN KUMAR	18
56	208B5A0501	PAPANABOINA RADHA	20

Faculty Coordinator

HOD

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Department of CSE
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NH-16, Valluru -523272, Ongole, Prakasam District, A.P, India

DEPARTMENT OF COMPUTER SCIENCE ENGINEERING

BRANCH:CSE-I
YEAR : II-II

Academic year:2020-21

Certificate program on "ADVANCED GRAPH THEORY"

STUDENT ASSESSMENT SHEET

S.NO	ROLL NUMBERS	NAME OF THE STUDENT	MARKS
1	198B1A0501	AKKALA PAVANI REDDY	18
2	198B1A0502	ANALA JAYA SRENIKA	19
3	198B1A0503	ANUMULA ANJALI	19
4	198B1A0505	BUDDULA KELITA JOVEL	17
5	198B1A0506	CHANDRAGIRI SIVANI	18
6	198B1A0507	CHAVA LAKSHMI SIVANI	19
7	198B1A0508	CHENNAMSETTY VENKATA LAKSHMI	20
8	198B1A0509	CHEVUTURI VISHNAVI	19
9	198B1A0510	DONTHIREDDY SNEHA LATHA REDDY	18
10	198B1A0511	GHORAKAVI VENKATA LAKSHMI SRAVANTHI	20
11	198B1A0512	GOPIREDDY VARSHITHA SAI	18
12	198B1A0513	GUDISA MOUNIKA	18
13	198B1A0514	IRAGALA NANDINI	17
14	198B1A0515	JASTI ANJALI DEVI	20
15	198B1A0516	KAKARLA HASEENA	20
16	198B1A0517	KAMUJULA LAKSHMI PRIYANKA	17
17	198B1A0518	KODURI BINDU	20
18	198B1A0519	KOTA VENKATA SATYA AHALYA	17
19	198B1A0520	MARAM AKHILA	19
20	198B1A0521	MEDAGAM ABHINAYA	17
21	198B1A0522	MYLAVARAPU VINITHA	19
22	198B1A0523	NADENDLA SAI PUJITHA	18
23	198B1A0524	PACHIPULUSU VASANTHI	19
24	198B1A0525	PATHI DURGA DEVI	18
25	198B1A0526	RAYAPATI POOJITHA	20
26	198B1A0527	SHAIK HEENA THAKDEES	19
27	198B1A0528	SHAIK MOBEENA	19
28	198B1A0529	SOMARAJUPALLI NAGA SRAVANI	19
29	198B1A0530	TALLAPANENI SNEHA LATHA	19
30	198B1A0531	VAYIGANDLA PADMA SAI	17
31	198B1A0532	YEKAMBARAM SREELEKHA	19
32	198B1A0533	BATHULA PAVAN KALYAN	17
33	198B1A0534	BATTU SISINDRI	18
34	198B1A0535	BATTULA PRAVEEN KUMAR	18
35	198B1A0536	BODAPATI VINOD	18
36	198B1A0537	CHALLA AJAY VARMA	

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S.NO	ROLL NUMBERS	NAME OF THE STUDENT	MARKS
37	198B1A0538	CHENNAMSETTY NARESH	19
38	198B1A0539	GANGADI DEEPAK	18
39	198B1A0540	INDRA LINGESWARA REDDY JETTY	18
40	198B1A0541	KOVURI RAJESH	19
41	198B1A0542	MARAM BHARGAVA REDDY	19
42	198B1A0543	NUNE HAREESWARA ASWINI KUMAR	18
43	198B1A0544	PALADUGU VENKATA SIVA SAI RAM	19
44	198B1A0545	PEDDINENI SAI MANOJ	20
45	198B1A0546	PINNAKA BALA VENKATA KISHORE CHOWDARY	18
46	198B1A0547	RAVINUTHALA SUMANTH	20
47	198B1A0548	SAGA RAVIKUMAR	18
48	198B1A0549	SHAIK SHABBIR	19
49	198B1A0550	SRI CHAKRAVARTI NALLURI	19
50	198B1A0551	TULABANDULA PRAVEEN	20
51	198B1A0552	VEMIREDDY RAMESH REDDY	19
52	198B1A0553	VENNA SIVANJI REDDY	20
53	198B1A0554	VISHNUVARDAN REDDY BADDELA	19

Coordinator

HOD

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NH-16, Valluru -523272, Ongole, Prakasam District, A.P, India.

REPORT OF THE CERTIFICATE PROGRAM

Advanced Graph Theory

ON

22-08-2020 TO 26-08-2020

Organized by the Department of CSE

Target Audience: II CSE

1. Introduction

One week Certificate program on "ADVANCED GRAPH THEORY" was organized by the Department of Computer Science & Engineering, Rise Krishna Sai Gandhi Group of Institutions , Ongole, from 22nd Aug to 26th Aug 2020(duration 05 days).

The participants were students from Ist Semester CSE department of RGAN. Around 109 Students registered and successfully completed the certificate program. The speakers were the faculties from Computer Science and Engineering department Mr.P.Isaac paul., and Mr.Ch.Sitaram.

The certificate program was inaugurated on 22nd Aug 2020 Mr.P.Isaac paul., Head of the department Computer Science Engineering and . The valedictory was held on 26th Aug 2020. Mr. CH.SITARAM, Asst. Prof. from CSE coordinated the Course. All the resource persons were invited and were present for both inauguration and valedictory.

Certificate program Trainer:-

Mr. M. Siva prasanth, Working as Freelancer Trainer at State Head for Corporate communication

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Outcome of the Certificate program:

The topics covered in the course provide students understand the features of "ADVANCED GRAPH THEORY" so that they can improve their coding skills. During the course of the workshop the resource persons ensured that a number of real world applications are solved. Many assignments were given and discussed that helped the students prepare for their placements and other competitive exams. It also boosted the student's confidence in taking up projects.

TOPIC

Graph Theory:

- Introduction to Graphs.
- Its applications.

Paths, Cycles, and Trails:

- Basics of Paths
- Cycles, and Trails
- Connection
- Bipartite Graphs

Eulerian Circuits:

- Vertex Degrees and Counting
- Degree-sum formula
- The Chinese Postman Problem
- Graphic Sequences

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Trees and Distance:

- Properties of Trees
- Spanning Trees
- Enumeration
- Matrix-tree computation
- Cayley's Formula
- Prufer code

Matchings and Covers:

- Hall's Condition
- Min-Max Theorem
- Independent Sets
- Covers
- Maximum Bipartite Matching
- Augmenting Path Algorithm

Weighted Bipartite Matching:

- Hungarian Algorithm
- Stable Matchings

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- Faster Bipartite Matching

Factors & Perfect Matching in General Graphs:

- Matching in General Graphs
- Edmonds' Blossom Algorithm

Connectivity and Paths:

- Cuts and Connectivity
- k-Connected Graphs

Network Flow Problems:

- Ford-Fulkerson Labeling Algorithm
- Max-Flow Min-cut Theorem
- Menger's Proof using Max-Flow Min-Cut Theorem

Vertex Coloring and Upper Bounds:

- Brooks' Theorem
- Color-Critical Graphs:
- Counting Proper Colorings

Planar Graphs:

- Characterization of Planar Graphs
- Kuratowski's Theorem
- Wagner's Theorem

Line Graphs and Edge-coloring
Hamiltonian Graph

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Traveling Salesman Problem
- ❖ NP-Completeness

Dominating Sets:
- ❖ Connected Dominating Set
- ❖ Distributed Algorithm

Coordinator

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RISE Krishna Sai Gandhi Group of
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(APPROVED BY AICTE-NEW DELHI, AFFILIATED TO JNTUK KAKINADA)
NH-16, Valluru-523272, Ongole, Prakasam (Dist), AndhraPradesh, India

Department of Computer Science & Engineering

Date: 26-08-2020.

To

The principal

Rise Krishna Sai Gandhi Group of Instutions

CLOSING REPORT

As per the approved schedule Rise Krishna Sai Gandhi group of Institutions conducted a **Certificate Program on"ADVANCED GRAPH THEORY"** at CSE Seminar Hall From **22-08-2020** to **26-08-2020** from 9.00am to 5 .00 pm per day.The students of II CSE total 107 are participated in this programme. This Certificate Program head attended Mr. M. Siva prasanth, Working as Freelancer Trainer at State Head for Corporate communication

Main issues addressed:

- Matching
- Connectivity and edge
- Independence and Covering
- Labelings
- Perfect Graphs

We are expecting your support in future also, for that we will be thankful to you.

Thanking you sir,

Yours faithfully,

Faculty Coordniator

HOD

HEAD OF THE DEPARTMENT
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RISE Krishna Sai Gandhi Group of
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PRINCIPAL
RISE KRISHNA SAI GANDHI
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