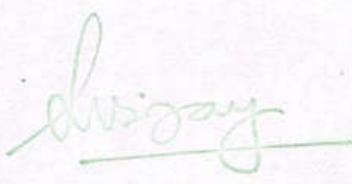


Index

Criterion No. 1.1.1

Criterion Details: The Institute ensure effective curriculum delivery through a well-planned and documented process.

S. No.	Particulars	Annexure No.
1	University Academic Calendar	Annexure - I
2	Institute Academic Calendar	Annexure - II
3	Time Table	Annexure - III
4	Course Allotment	Annexure - IV
5	Sample Course File	Annexure - V
6	Sample Lab Course File	Annexure - VI
7	Innovative Learning Practices	Annexure - VII
8	Industrial Visit & Field Trip	Annexure - VIII
9	Sample Case Studies	Annexure - IX
10	Sample Power Point Presentation	Annexure - X
11	Sample Question Bank	Annexure - XI
12	MCQ and MSQ	Annexure - XII



Director
Tula's Institute, Dehradun

1.1 - Curricular Planning and Implementation

1.1.1 - The Institution ensures effective curriculum delivery through a well planned and documented process

The college meticulously follows the academic calendar prescribed by the affiliated university, ensuring strict alignment with academic standards. A well-structured teaching strategy is implemented to enhance learning outcomes, with meticulous documentation of teaching activities.

Following internal and external examinations, students are classified into slow and fast learners. Remedial classes, peer teaching, cross-teaching, and group assignments are tailored to support slow learners, while advanced learners receive specialized coaching and participate in intercultural interactive sessions to enhance their academic and career prospects.

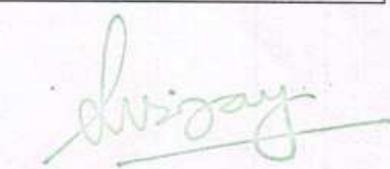
Teachers meticulously prepare course files, encompassing instructional delivery plans, materials, and assessment items tailored to course outcomes and competencies. Presentations are utilized to elucidate complex ideas and concepts.

Laboratory sessions serve to reinforce theoretical concepts through experimentation and result interpretation, fostering student reflection and understanding of practical applications.

Teachers actively encourage students to utilize tools and techniques for knowledge construction, information gap filling, inference making, and classroom discussions.

Formative assessment is seamlessly integrated into the teaching and learning process, supported by question banks provided by instructors. Internal assessments are conducted, evaluated, and results promptly published in accordance with university guidelines.

File Description	Documents
Upload relevant supporting document	
Link for Additional information	Nil



**Director
Tula's Institute, Dehradun**

University Academic Calendar



VEER MADHO SINGH BHANDARI
UTTARAKHAND TECHNICAL UNIVERSITY DEHRADUN

Ref. No. 3310 /UTU/REV AC/2022-23

Dated: 31 January 2023

Revised Academic Calendar Session 2022-23 (Even Semester)

Description of Activities	Dates (Day)
Winter Break	04 February 2023 (Saturday) to 12 February 2023 (Sunday)
Registration of students in Even Semester	13 February 2023 (Monday) to 14 February 2023 (Tuesday)
Commencement of Classes of Even Semester	15 February 2023 (Wednesday)
Class Test-I for all students (except first semester students)	20 March 2023 (Monday) to 24 March 2023 (Friday)
Last Date for Showing Evaluated Answer Sheet to student for Class Test-I	25 March 2023 (Saturday)
Class Test-II for all students (except first semester students)	08 May 2023 (Monday) to 13 May 2023 (Saturday)
Last Date for Showing Evaluated Answer Sheet to student for Class Test-II	15 May 2023 (Saturday)
Week for extracurricular activities (preferably beyond class hours)	15 May 2023 (Monday) to 20 May 2023 (Saturday)
Filling of Examination form of Registered/Enrolled Students along with option for deletion of subject for the students admitted under Choice Based Credit System (CBCS) in 2022-23	15 May 2023 (Monday) to 20 May 2023 (Saturday)
Last Date of Teaching	30 May 2023 (Tuesday)
Last Date of Examination Fee Submission in University	25 May 2023 (Thursday)
Last Date of Declaration of Examination Schedule	25 May 2023 (Thursday)
Last Date of submission the Sessional Marks	02 June 2023 (Friday)
Start of Semester Theory Examination	02 June 2023 (Friday)
Practical Examination Duration	22 June 2023 (Thursday) to 29 June 2023 (Thursday)
Last Date of submission of Practical Examination Marks	30 June 2023 (Friday)
Semester Break	01 July 2023 (Saturday) – 14 August 2023 (Monday)
Start Internship/Industrial Training	01 July 2023 (Saturday)
Summer semester classes (optional)	01 July 2023 (Saturday) to 21 July 2023 (Friday)
Result Declaration	Second week of July 2023
Filling of Examination form to attain minimum credits	10 July 2023 (Monday) to 12 July 2023 (Wednesday)
Last date of fee submission of Examination to attain minimum credits	14 July 2023 (Friday)
Examination Schedule for Examination to attain minimum credits	17 July 2023 (Monday) to 31 July 2023 (Monday)
Result declaration of Examination to attain minimum credits	Second week of August 2023
Commencement of Academic Session 2023-24	16 August 2023 (Wednesday)

Note: 1. The Institute shall ensure minimum teaching hours as prescribed in the University ordinance/regulatory body for each semester. If required the Director/Principal shall arrange extra classes on weekends/holidays.

2. The Director/Principal of Institute shall ensure the submission of attendance of students to university on regularly basis through online mode. If the students fail to appear in any test, it will be the responsibility of the Principal/Director of the Institute to arrange make up class test for such students. If the student fails to appear in first class test, his makeup class test will be conducted before second class test and in case of second-class test at least one month before the start of end semester theory examination. The duration of class test will be minimum one hour of each class test, 70% attendance at 1st test and 75% attendance at second class test are required. In case attendance is short, parents are be informed accordingly on monthly basis.

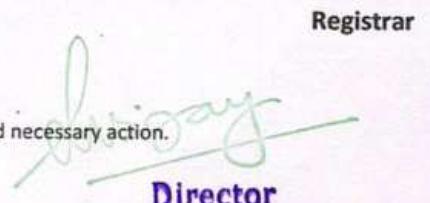
3. The Director/Principal of Institute shall ensure that the students, who have not attained the minimum required attendance as per norms prescribed in relevant ordinance, are not allowed to appear in end semester examination. It will be obligatory on the part of the Director/Principal of the Institute to detain such students and their admit cards should not be issued to them. A list of students detained from appearing in University Examination(s) be submitted to Controller of Examination and examination centre before the commencement of the theory examination.

4. Teachers will have to perform evaluation work of University exam or other duty assigned by University in Winter/Summer Semester Break for which they will be entitled to get earned leave as per rules.

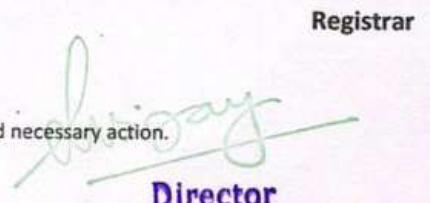
5. Above calendar is subject to change as per exigencies, if any.

Copy to :

1. P.S. to Hon. Vice-Chancellor V.M.S.B. U.T.U. Dehradun for information.
2. Finance Controller V.M.S.B. U.T.U. Dehradun for information and necessary action.
3. Controller of Examination V.M.S.B. U.T.U. Dehradun for information and necessary action.
4. All Directors/Principals for affiliated institute from V.M.S.B. U.T.U. Dehradun for information and necessary action.
5. Nodal Officer University Management System for necessary action on UMS.
6. Web Master for publishing on University Portal.
7. Guard File.



(R.P. Gupta)
Registrar


Director
Tula's Institute, Dehradun



VEER MADHO SINGH BHANDARI
UTTARAKHAND TECHNICAL UNIVERSITY DEHRADUN

Ref. No. Camp-Memo /UTU/AC/2022-23

Dated : 30 July 2022

Academic Calendar Session 2022-23		
Event & Description	Dates/Day	
	ODD SEMESTER	EVEN SEMESTER
Commencement of classes session for existing students	22 August 2022 (Monday)	Registration for all students 01 February 2023 (Wednesday) to 03 February 2023 (Friday) Commencement of classes:- 04 February 2022 (Saturday)
Registration for first semester students	12 September 2022 (Monday)	-
Induction Programme for first semester Students (Preferably beyond class hours)	13 September 2022 (Tuesday) to 03 October 2022 (Monday)	-
Commencement of Classes for First Semester Students	13 September 2022 (Tuesday)	-
Class Test-I for all students (except first semester students)	19 September 2022 (Monday) to 24 September 2022 (Saturday)	13 March 2023 (Monday) to 18 March 2023 (Saturday) for all even semester students 22 March 2023 (Wednesday)
Last Date for Showing Evaluated Answer Sheet to student for Class Test-I	28 September 2022 (Wednesday)	
Class Test-I for Students (first semester students)	13 October 2022(Thursday) to 19 October 2022 (Wednesday)	-
Last Date for Showing Evaluated Answer Sheet to student for Class Test-I	22 October 2022 (Saturday)	
Class Test-II for all students (except first semester students)	31 October 2022(Monday) to 05 November 2022 (Saturday)	24 April 2023 (Monday) to 29 April 2023 (Saturday) for all even semester students
Last Date for Showing Evaluated Answer Sheet to student for Class Test-II	10 November 2022 (Thursday)	04 May 2023 (Thursday)
Class Test-II for students (first semester students)	21 November 2022 (Monday) to 26 November 2022 (Saturday)	-
Last Date for Showing Evaluated Answer Sheet to student for Class Test-II	30 November 2022 (Wednesday)	
Week for extracurricular activities (preferably beyond class hours)	24 November 2022(Thursday) to 30 November 2022 (Wednesday)	05 May 2023 (Friday) to 11 May 2023 (Thursday)
Last date for enrolment of new admissions	15 November 2022 (Tuesday)	-
Filling of Examination form of Registered/Enrolled Students along with option for deletion of subject for the students admitted under Choice Based Credit System (CBCS) in 2022-23	18 November 2022 (Friday) to 25 November 2022 (Friday)	05 May 2023 (Friday) to 11 May 2023 (Thursday)
Last Date of Teaching (except first semester students)	03 December 2022 (Saturday)	15 May 2023 (Monday) for all even semester students
Last Date of Examination Fee Submission in University	30 November 2022 (Wednesday)	15 May 2023 (Monday)
Declaration of Examination Schedule	05 December 2022 (Monday)	15 May 2023 (Monday)
Last Date of Teaching (first semester students)	13 December 2022 (Tuesday)	-



VEER MADHO SINGH BHANDARI
UTTARAKHAND TECHNICAL UNIVERSITY DEHRADUN

Ref. No. Camp-Memo /UTU/AC/2022-23

Dated : 30 July 2022

Academic Calendar Session 2022-23

Event & Description	Dates/Day	
	ODD SEMESTER	EVEN SEMESTER
Practical Examination (during practical examination classes may be continued in gaps to covers syllabus if left)	15 December 2022 (Thursday) to 22 December 2022 (Thursday)	16 May 2023 (Tuesday) to 23 May 2023 (Tuesday)
Last Date of submission the Sessional/Practical Marks	24 December 2022 (Saturday)	24 May 2023 (Wednesday)
Start of Semester Theory Examination	27 December 2022 (Tuesday)	29 May 2023 (Monday)
Semester Break	16 January to 31 January 2023	-
Start Internship/Industrial Training		26 June 2023 (Monday)
Summer semester classes (optional)		01 July 2023 (Saturday) to 21 July 2023 (Friday)
Result Declaration	Second week of February 2023	Second week of July 2023
Filling of Examination form to attain minimum credits	-	10 July 2023 (Monday) to 12 July 2023 (Wednesday)
Last date of fee submission of Examination to attain minimum credits	-	15 July 2023 (Saturday)
Examination Schedule for Examination to attain minimum credits	-	01 August 2023 (Tuesday) to 14 August 2023 (Monday)
Result declaration of Examination to attain minimum credits	-	Last week of August 2023

Note: 1. The Institute shall ensure minimum teaching hours as prescribed in the University ordinance/regulatory body for each semester. If required the Director/Principal shall arrange extra classes on weekends/holidays.

2. The Director/Principal of Institute shall ensure the submission of attendance of students to university on regularly basis through online mode. If the students fail to appear in any test, it will be the responsibility of the Principal/Director of the Institute to arrange make up class test for such students. If the student fails to appear in first class test, his makeup class test will be conducted before second class test and in case of second-class test at least one month before the start of end semester theory examination. The duration of class test will be minimum one hour of each class test, 70% attendance at 1st test and 75% attendance at second class test are required. In case attendance is short, parents are be informed accordingly on monthly basis.

3. The Director/Principal of Institute shall ensure that the students who have not attained the minimum required attendance as per norms prescribed in relevant ordinance, are not allowed to appear in end semester examination. It will be obligatory on the part of the Director/Principal of the Institute to detain such students and their admit cards should not be issued to them. A list of students detained from appearing in University Examination(s) be submitted to Controller of Examination and examination centre before the commencement of the theory examination.

4. Above calendar is subject to change as per exigencies, if any.

(R.P. Gupta)
Registrar

Copy to:

1. P.S. to Hon. Vice-Chancellor V.M.S.B. U.T.U. Dehradun
2. Finance Controller V.M.S.B. U.T.U. Dehradun
3. Controller of Examination V.M.S.B. U.T.U. Dehradun
4. All Directors/Principals for affiliated institute from V.M.S.B. U.T.U. Dehradun
5. For Publish on University Portal



श्री देव सुमन उत्तराखण्ड विश्वविद्यालय
बादशाहीथौल (टिहरी गढ़वाल) उत्तराखण्ड-२४६९६६
Sri Dev Suman Uttarakhand University
Badshahithaul (Tehri Garhwal) Uttarakhand - 249199

पत्रांक:- ३७१९/प्रशासन/एसडीएसयूवी/2022

दिनांक: १५ अगस्त, 2022

शैक्षणिक कलैण्डर सत्र 2022-23

1. प्रवेश पंजीकरण की पूर्व प्रारम्भ तिथि	16 जुलाई, 2022 से
1. (अ) प्रवेश पंजीकरण की अन्तिम तिथि	18 अगस्त, 2022 तक
राष्ट्रीय शिक्षा नीति 2020 के अन्तर्गत विभिन्न कक्षाओं (प्रथम सैमेस्टर) में प्रवेश	
2. बी०ए०/बी०ए०स०सी०/बी०कॉम० प्रथम वर्ष/प्रथम सैमेस्टर में प्रवेश शुल्क जमा करने की अन्तिम तिथि	31 अगस्त, 2022 तक
3. शैक्षिक सत्र प्रारम्भ की तिथि	01 सितम्बर, 2022
बी०ए०/बी०ए०स०सी०/बी०कॉम० द्वितीय वर्ष/तृतीय वर्ष (वार्षिक पाठ्यक्रम)/तृतीय, पंचम एवं सप्तम सैमेस्टर और स्नातकोत्तर कक्षाओं में प्रवेश की तिथि	
1. प्रवेश आवेदन पत्र प्राप्त करने की तिथि	परीक्षा परिणाम घोषित होने के 07 दिनों के अन्तर्गत
2. प्रवेश शुल्क जमा करने की अन्तिम तिथि	प्रवेश आवेदन जमा करने के 03 दिनों के अन्तर्गत
3. वार्षिक कक्षाओं में शिक्षण कार्य प्रारम्भ तिथि	20 सितम्बर, 2022 से प्रारम्भ
4. सैमेस्टर कक्षाओं में शिक्षण कार्य प्रारम्भ तिथि (ऑनलाइन/ऑफलाईन एवं मिश्रित मोड)	01 अक्टूबर, 2022 से प्रारम्भ

सैमेस्टर पाठ्यक्रम

राष्ट्रीय शिक्षा नीति 2020 के अन्तर्गत संचालित प्रथम सैमेस्टर

1. ऑनलाइन परीक्षा आवेदन पत्र भरने की तिथि	01 अक्टूबर, 2022 से 20 अक्टूबर, 2022 तक
2. विलम्ब शुल्क रु 500/- -सहित जमा करने की अन्तिम तिथि	30 अक्टूबर, 2022
3. विषम सैमेस्टर पाठ्यक्रम अध्यापन अवधि	01 सितम्बर, 2022 से 15 दिसम्बर, 2022 तक
4. परीक्षा तिथि	17 दिसम्बर, 2022 से 07 जनवरी, 2023 तक
5. महाविद्यालय में परीक्षा आवेदन पत्र (हार्ड कॉपी) जमा करने की अंतिम तिथि	10 नवम्बर, 2022 तक
6. महाविद्यालय से परीक्षा आवेदन पत्र विश्वविद्यालय को प्रेषण की तिथि	15 नवम्बर, 2022 तक

शेष विषम सैमेस्टर (तृतीय, पंचम एवं सप्तम)

1. ऑनलाइन परीक्षा आवेदन पत्र भरने की तिथि	01 नवम्बर, 2022 से 15 नवम्बर, 2022 तक
2. विलम्ब शुल्क रु 500/- -सहित जमा करने की अन्तिम तिथि	20 नवम्बर, 2022
3. विषम सैमेस्टर पाठ्यक्रम अध्यापन अवधि	01 अक्टूबर, 2022 से 10 जनवरी, 2023 तक
4. परीक्षा तिथि	15 जनवरी, 2023 से 10 फरवरी, 2023 तक
5. महाविद्यालय में परीक्षा आवेदन पत्र (हार्ड कॉपी) जमा करने की अंतिम तिथि	25 नवम्बर, 2022 तक
6. महाविद्यालय से परीक्षा आवेदन पत्र विश्वविद्यालय को प्रेषण की तिथि	30 नवम्बर, 2022 तक

Director
 Tula's Institute, Dehradun

राष्ट्रीय शिक्षा नीति 2020 के अन्तर्गत संचालित सम सैमेस्टर	
1. ऑनलाइन परीक्षा आवेदन पत्र भरने की तिथि	05 मार्च, 2023 से 20 मार्च, 2023 तक
2. विलम्ब शुल्क रु 500/-सहित जमा करने की अन्तिम तिथि	25 मार्च, 2023 तक
3. महाविद्यालय में परीक्षा आवेदन पत्र (हार्ड कॉपी) जमा करने की अंतिम तिथि	30 मार्च, 2023 तक
4. महाविद्यालय से परीक्षा आवेदन पत्र (हार्ड कॉपी) विश्वविद्यालय को प्रेषण की तिथि	05 अप्रैल, 2023 तक
5. सम सैमेस्टर पाठ्यक्रम अध्यापन अवधि	01 फरवरी, 2023 से 13 मई, 2023 तक
6. परीक्षा तिथि	15 मई, 2023 से 05 जून, 2023 तक
अन्य सम सैमेस्टर (चतुर्थ, षष्ठि व अष्टम)	
1. ऑनलाइन परीक्षा आवेदन पत्र भरने की तिथि	20 मार्च, 2023 से 05 अप्रैल, 2023 तक
2. विलम्ब शुल्क रु 500/-सहित जमा करने की अन्तिम तिथि	10 अप्रैल, 2023 तक
3. महाविद्यालय में परीक्षा आवेदन पत्र (हार्ड कॉपी) जमा करने की अंतिम तिथि	15 अप्रैल, 2023
4. महाविद्यालय से परीक्षा आवेदन पत्र (हार्ड कॉपी) विश्वविद्यालय को प्रेषण की तिथि	20 अप्रैल, 2023 तक
5. सम सैमेस्टर पाठ्यक्रम अवधि	10 फरवरी, 2023 से 15 मई, 2023
6. परीक्षा तिथि	17 मई, 2023 से 10 जून, 2023 तक
वार्षिक परीक्षा 2022-23	
1. ऑनलाइन परीक्षा आवेदन पत्र प्रारम्भ करने की तिथि	01 मार्च, 2023 से 20 मार्च, 2023
2. विलम्ब शुल्क रु 500.00 सहित जमा करने की अंतिम तिथि	25 मार्च, 2023
3. महाविद्यालय में परीक्षा आवेदन पत्र (हार्ड कॉपी) जमा करने की अंतिम तिथि	30 मार्च, 2023 तक
4. महाविद्यालयों/संस्थानों द्वारा विश्वविद्यालय परीक्षा आवेदन पत्र जमा करने की अंतिम तिथि	05 अप्रैल, 2023 तक
5. परीक्षा तिथि	10 अप्रैल, 2023 से 05 मई, 2023 तक
प्रायोगिक/ मौखिक परीक्षा	
1. विषम सैमेस्टर प्रायोगिक परीक्षा प्रारम्भ तिथि	01 दिसम्बर, 2022
2. सम सैमेस्टर प्रायोगिक परीक्षा प्रारम्भ तिथि	01 अप्रैल 2023
वार्षिक अवकाश तथा कार्य दिवसों का विवरण—	
1. रविवार	54 दिन
2. सार्वजनिक/ निर्वन्धित/ स्थानीय/ विवेकाधीन अवकाश	23 दिन
3. शीतकालीन अवकाश	उत्तराखण्ड सरकार/ शासन के निर्देशानुसार
4. ग्रीष्मकालीन अवकाश	तदैव
5. विश्वविद्यालय स्थापना दिवस	04 नवम्बर, 2022
6. श्रीदेव सुमन जन्म दिवस	25 मई, 2023

- विश्वविद्यालय अनुदान आयोग/मानव संसाधन विकास मंत्रालय भारत सरकार एंव उत्तराखण्ड सरकार/शासन के दिशा निर्देशों के अनुरूप शैक्षणिक कलेण्डर में समय-समय पर परिवर्तन किया जा सकता है।
- अन्तर्महाविद्यालयीय एवं अन्तर्विश्वविद्यालयीय कीड़ा एवं सांस्कृतिक प्रतियोगिताओं हेतु कलेण्डर विश्वविद्यालय द्वारा पृथक से निर्गत किया जायेगा।


 कुलसचिव
 श्रीदेव सुमन उत्तराखण्ड विश्वविद्यालय
 टिहरी नहाल


 Director
 Tula's Institute, Dehradun

Institute Academic Calendar

ACADEMIC CALENDAR

Even Semester

Session: 2022-2023

S.No.	Particulars	Date					Responsibility
1.	Time Table (a) Display on Notice Boards (b) Distribution to concerned Teachers	12 February 2023					Respective HoD
2.	Distribution of Provisional class roll lists to teachers	14 February 2023					Registrar
3.	Commencement of Classes	15 February 2023					Concerned HoD
	VMSB UTU & UBTER Programs	BA(H) JMC	BCA	B.COM(H)	BBA	B.Sc.(AG)	
	SDSUV Programs	27 March 2023		29 March 2023	06 April 2023		
4.	1st Test Series*	UTU	UBTER	SDSUV			Exam committee
		11-13 April 2023		16-19 May 2023			
5.	Cultural festival : SANSKRITI	12-13 May 2023					Event Convener
6.	2nd Test Series *	UTU	UBTER	SDSUV			Exam committee
		16-19 May 2023		21-24 June 2023			
7.	Theory Examinations* Collection of Admit Cards	As per University notification					Registrar/Exam committee

*May be revised as per UTU/SDSUV/UBTER schedule.

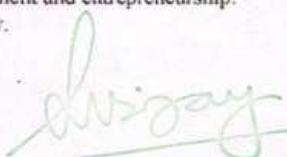


Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission:

- Promote intellectual and skilled human capital generation employment and entrepreneurship.
- Be educational centre of excellence of multi ethnicity and diversity.
- Establish as technology driven teaching learning institution.
- Provide world class platform for research and innovation.
- Inculcate social, environmental, heritage values.


Director
Tula's Institute, Dehradun

 Dholikot, P.O. Selaqui, Chakrata Road
Dehradun - 248011 (U.K. India)

 www.tulas.edu.in

 0135-2699300
0135-2699303



TULA'S DEHRADUN

INSTITUTE

*Approved by AICTE, Ministry of HRD, Govt. of India * ISO 9001:2015

Affiliated: *Uttarakhand Technical University * Sri Dev Suman Uttarakhand University *Uttarakhand Board of Technical Education

ACADEMIC CALENDAR

Odd Semester

Session : 2022-2023

S.No.	Particulars	Date	Responsibility
1.	Distribution of Provisional class lists to teachers	14 August' 2022	Concerned HoD
2.	Time Table Display on Notice Boards	16 August' 2022	Concerned HoD
3.	Commencement of Classes 2 nd , 3 rd & 4 th Year	16 August 2022	Concerned HoD
4.	Commencement of Classes - 1 st year (Including orientation/Induction program)	05 September 2022	Concerned HoD
4.	Induction/ Orientation Ceremony	05-25 September' 2022	Dr.Nidhi Goyal/ Ms. Navjyoti Singhal
5.	For VMSB UTU & UBTER 2 nd /3 rd /4 th Year	10-12 October' 2022	Exam committee
6.	1 st CIE* For SDSUV 2 nd /3 rd /4 th Year	To be decided as per the University Exam dates	Exam committee
7.	1 st CIE*(For all First year students)	09-12 November' 2022	Exam committee
8.	Technical Festival : Utkrisht'2022*	25-26 November' 2022	Event Convener
9.	2 nd CIE * (For all 2 nd /3 rd /4 th Year)	07-10 December' 2022	Exam committee
10.	2 nd CIE * (For all First Year)	28-30 December' 2022	Exam committee
11.	Theory Examinations* Collection of Admit Cards	To be announced later	Registrar/Exam committee

CIE = Continuous Internal Evaluation

*May be revised as per UTU/SDSUV/UBTER schedule.

(Dr. Nishant Saxena)
Dean Academics



Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission:

- Promote intellectual and skilled human capital generation employment and entrepreneurship.
- Be educational centre of excellence of multi ethnicity and diversity.
- Establish as technology driven teaching learning institution.
- Provide world class platform for research and innovation.
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Director
Tula's Institute, Dehradun

Time Table

TULA'S INSTITUTE, DEHRADUN
ODD Semester (Session 2023-2024) Time Table
Department of Applied Sciences and Engineering

Semester : II

Name of Program: B.Tech (CSE)

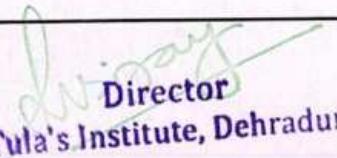
Section : II-A

Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30
Monday	AHT-003 (L) A.M. D-201	ECT-001 (L) S.G. D-201	AHT-002 (L) T.K. D-201		MET-001 (L) A.J. D-201	AHP-004 G-1 D-201 CSP-002 G-2 F-104 LAB	LIB	MET-001 G-1 (T) ECT-001 G-2 (T) D-201/E-302
Tuesday	AHT-003 (L) A.M. D-201	ECT-001 (L) S.G. D-201	MET-001 (L) A.J. D-201		ECT-001 G-1 (T) MET-001 G-2 (T) E-302/D-201	AHT-002 (L) T.K. D-201		AHP-002 G-1 E-104 SPPSM G-2 D-201 LAB
Wednesday	AHT-003 (L) A.M. D-201		MEP-001 G-1 G-201 MEP-003 G-2 I-201 LAB		MET-001 (L) A.J. D-201	AHT-003 G-1 (T) AHT-002 G-2 (T) D-201/D-202		ECP-001 G-1 E-302 AHP-006 G-2 I-201 LAB
Thursday	ECT-001 (L) S.G. D-201	AHT-002 (L) T.K. D-201	AHT-002 G-1 (T) AHT-003 G-2 (T) E-104/D-201		MEP-003 G-1 D-201 MEP-001 G-2 G-201 LAB			AHP-006 G-1 I-201 ECP-001 G-2 E-302 LAB
Friday	AHT-003 (L) A.M. D-201	AHT-002 (L) T.K. D-201	ECT-001 (L) S.G. D-201		SPPSM G-2 AHP-002 G-1 E-104 LAB	MET-001 (L) A.J. D-201	CSP-002 G-1 F-104 AHP-004 G-2 D-201 LAB	
Saturday	ECT-001 (L) S.G. D-201	MET-001 (L) A.J. D-201	AHT-002 (L) T.K. D-201		AHT-003 (L) A.M. D-201			

S.No	Course Code	Name of Course	Faculty code	Name of Faculty Member
1	AHT-003	Mathematics-1	A.M	Dr. Ashish Mishra
2	ECT-001	Basic Electronics Engineering	S.G	Mr. Sandeep Gautam
3	ECP-001	Basic Electronics Engineering Lab	S.G	Mr. Sandeep Gautam
4	AHT-002	Engineering Chemistry	T.K	Dr. Tarun Kumar
5	AHP-002	Engineering Chemistry Lab	S.KS	Dr. Sanket Kumar Saxena
5	AHP-006	English Language Lab	N.B	Dr. Neelima Bangwal
6	MET-001	Basic Mechanical Engineering	A.J	Mr. Ankit Jain
7	MEP-001	Basic Mechanical Engineering Lab	D.K	Mr. Ankit Jain
8	MEP-003	Workshop Practice Lab	A.M	Mr. Amit Morya
9	AHP-004	Emerging Technologies in Engineering	S.S	Dr. Sunil Semwal
10	CSP-002	Computer Applications in IOT	R.N	Mr. Rahul Negi
11		Student's Personal Problem Solving With LIBRARY	AM & NB	Dr. Ashish Mishra & Dr. Neelima Bangwal
			LIB	Dr. Ashish Mishra


Time Table Coordinator
(Mr. Deepak Chandola)


HOD (A.S.E.)
(Mr. Mukesh Pathela)


Director
Tula's Institute, Dehradun

TULA'S INSTITUTE, DEHRADUN
ODD Semester (Session 2023-2024) Time Table
Department of Applied Sciences and Engineering

Semester : II

Name of Program: B.Tech (CSE)
 Section : II-C

Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30
Monday	AHT-003 (L) S.N. D-203	ECT-001 (L) M.P. D-203	MET-001 (L) S.P. D-203		AHT-002 (L) S.K.S D-203	ECT-001 G-1 (T) MET-001 G-2 (T) E-302/D-203	MEP-001 G-1 G-104 MEP-003 G-2 J-101 LAB	
Tuesday	AHT-003 (L) S.N. D-203	AHP-004 G-1 D-203 CSP-002 G-2 I-201 LAB	AHT-002 (L) S.K.S D-203		ECT-001 G-2 (T) MET-001 G-1 (T) E-302/D-203	AHT-003 G-1 (T) AHT-002 G-1 (T) D-203/E-104	ECT-001 (L) M.P. D-203	MET-001 (L) S.P. D-203
Wednesday	AHT-003 (L) S.N. D-203	AHP-004 G-2 D-203 CSP-002 G-1 I-201 LAB	AHT-003 G-1 (T) AHT-002 G-2 (T) D-203/E-104		ECT-001 (L) M.P. D-203	LIB		SPSSM G-2 AHP-002 G-1 E-101 LAB
Thursday	AHT-002 (L) S.K.S D-203	ECT-001 (L) M.P. D-203	AHT-003 (L) S.N. D-203		ECP-001 G-2 E-302 AHP-006 G-1 I-201 LAB			SPSSM G-1 AHP-002 G-2 E-101 LAB
Friday	AHT-002 (L) S.K.S D-203	AHT-003 (L) S.N. D-203	MET-001 (L) S.P. D-203		ECP-001 G-1 E-302 AHP-006 G-2 I-201 LAB			MEP-001 G-2 G-104 MEP-003 G-1 J-101 LAB
Saturday	MET-001 (L) A.G. D-202	AHT-002 (L) S.K.S D-203	ECT-001 (L) S.G. D-203		AHT-003 (L) S.N. D-203			

S.No	Course Code	Name of Course	Faculty code	Name of Faculty Member
1	AHT-003	Mathematics - I		S.N Mr. Alok Kumar
2	ECT-001	Basic Electronics Engineering		M.P Mr.Mukesh Pathela
3	ECP-001	Basic Electronics Engineering Lab		S.G Mr.Shashank Angnihotri
4	AHT-002	Engineering Chemistry		S.K.S Dr Sanket Kumar Saxena
5	AHP-002	Engineering Chemistry Lab		S.K.S Dr Sanket Kumar Saxena
5	AHP-006	English Language Lab		N.S Mrs. Neelima Bangwal
6	MET-001	Basic Mechanical Engineering		A.G Mr.Shubham Pal
7	MEP-001	Basic Mechanical Engineering Lab		A.G Mr Shubham Pal
8	MEP-003	Workshop Practice Lab		A.M Mr. Amit Morya
9	AHP-004	Emerging Technologies in Engineering		S.S Dr. Sunil Semwal
10	CSP-002	Computer Applications in IOT		H.R Ms. Himani Rawat
11		Student's Personal Problem Solving With Mentors		SKS & DC Dr.Sanket Kumar Saxena/Mr.Deepak Chandola
		LIBRARY		LIB Mr. Tikaram

Time Table Coordinator
 (Mr. Deepak Chandola)

HoD (A.S.E)
 (Mr. Mukesh Pathela)

HoD
 Department of Applied Sciences & Engineering
 Tula's Institute, Dehradun

Director
 Tula's Institute, Dehradun

TULA'S INSTITUTE, DEHRADUN
ODD Semester (Session 2023-2024) Time Table
Department of Applied Sciences and Engineering

Semester : II

Name of Program: B.Tech (CSE)

Section : II-B

Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30
Monday	ECT-001 (L) S.G. D-202	AHT-003 (L) S.N. D-202	AHP-004 G-1 D-202 CSP-002 G-2 F-104 LAB	MET-001 (L) A.G. D-202	MET-001 G-1 (T1) ECT-001 G-2 (T2) D-202/E-302	MET-001 G-1 (T1) ECT-001 G-2 (T2) E-302/D-202	AHP-002 G-1 E-104 SPPSM G-2 LAB	
Tuesday	AHT-003 (L) S.N. D-202	AHT-002 (L) T.K. D-202	AHT-003 G-1 (T1) AHT-002 G-2 (T2) D-203/D-201				MEP-001 G-1 G-104 MEP-003 G-2 J-101 LAB	
Wednesday	ECT-001 (L) S.G. D-202	MET-001 (L) A.G. D-202	AHT-002 (L) T.K. D-202		AHP-006 G-1 I-201 ECP-001 G-2 E-302 LAB		MEP-003 G-1 J-102 MEP-001 G-2 G-104 LAB	
Thursday	AHT-003 (L) S.N. D-202		ECP-001 G-1 E-302 AHP-006 G-2 I-201 LAB		AHP-002 G-2 E-104 LAB	AHT-002 (L) T.K. D-202	MET-001 (L) A.G. D-202	
Friday	ECT-001 (L) S.G. D-202	MET-001 (L) A.G. D-202	AHT-003 (L) S.N. D-202		AHP-004 G-2 D-202 CSP-002 G-1 F-104 LAB	AHT-002 (L) T.K. D-202		AHT-003 G-2 (T1) AHT-002 G-1 (T2) D-203/D-201
Saturday	MET-001 (L) A.G. D-202	AHT-003 (L) S.N. D-202	ECT-001 (L) S.G. D-202		AHT-002 (L) T.K. D-202			

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S.No	Course Code	Name of Course		Faculty code	Name of Faculty Member
1	AHT-003	Mathematics- I		P.C	Dr. Pawan Kumar Chubey
2	ECT-001	Basic Electronics Engineering		S.G	Mr. Sandeep Gautam
3	ECP-001	Basic Electronics Engineering Lab		B.V	Mr. Brijmohan Vidyarthi
4	AHT-002	Engineering Chemistry		T.K	Dr. Tarun Kumar
5	AHP-002	Engineering Chemistry Lab		S.K.S	Dr. Sanket Kumar Saxena
5	AHP-006	English Language Lab		N.S	Mrs. Navjyoti Singh
6	MET-001	Basic Mechanical Engineering		A.G	Mr. Anupam Gautam
7	MEP-001	Basic Mechanical Engineering Lab		A.G	Mr. Anupam Gautam
8	MEP-003	Workshop Practice Lab		A.M	Mr. Amit Morya
9	AHP-004	Emerging Technologies in Engineering		S.S	Dr. Sunil Semwal
10	CSP-002	Computer Applications in IOT		R.N	Mr. Rahul Negi
11		Student's Personal Problem Solving With Mentors		NS & SM	Mrs. Navjyoti Singh / Sanoj Mandal
		LIBRARY		LIB	

Aut. Initials
Time Table Coordinator
(Mr. Deepak Chandola)

Aut. Initials
HoD (A.S.E)
(Dr. Mukesh Pathela)
Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

Aut. Initials
Director
Tula's Institute, Dehradun

TULA'S INSTITUTE, DEHRADUN
ODD Semester (Session 2023-2024) Time Table
Department of Applied Sciences and Engineering

Semester : II

Name of Program: B.Tech ALL

Section : II-D

Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30
Monday	CST-001 (L) A.G. D-204	EET-001(L) A.C. D-204	AHT-003 (L) A.M. D-204		CSP-001 G-1 D-204 EEP-001 G-2 D-204 LAB		SPPSM G-1 D-204 SPPSM G-2 D-E-201	
Tuesday	EET-001(L) A.C. D-204	AHT-001(L) B.P.S. D-204	CST-001 (L) A.G. D-204		MEP-002 G-1 I-201 AHP-001 G-2 E-201 LAB	AHT-004 (L) T.U. D-204	CST-001 G-2 (T) AHT-001 G-1 (T) D-204/E-201	
Wednesday	EET-001(L) A.C. D-204	AHT-003 (L) A.M. D-204	AHT-001(L) B.P.S. D-204	AHT-003 G-2 (T) EET-001 G-1 (T) D-204/F-104	LIB		CSP-001 G-2 D-204 EEP-001 G-1 D-204 LAB	
Thursday	AHT-003 (L) A.M. D-204	AHT-001(L) B.P.S. D-204	CST-001 G-1 (T) AHT-001 G-2 (T) D-204/E-201	CST-001 (L) A.G. D-204	EET-001(L) A.C. D-204	AHT-004 (L) T.U. D-204	AHP-003 G-1 E-302 AHP-005 G-2 D-204 LAB	
Friday	CST-001 (L) A.G. D-204	AHT-003 (L) A.M. D-204	AHT-003 G-1 (T) EET-001 G-2 (T) D-204/F-104	AHP-001 G-1 E-201 MEP-002 G-2 I-201 LAB	AHT-001(L) B.P.S. D-204	AHT-001(L) B.P.S. D-204	AHP-005 G-1 D-204 AHP-003 G-1 E-302 LAB	
Saturday	CST-001 (L) A.G. D-204	EET-001(L) A.C. D-204	AHT-003 (L) A.M. D-204	AHT-001(L) B.P.S. D-204	AHT-004 (L) T.U. D-204			

S.No	Course Code	Name of Course	Faculty code	Name of Faculty Member
1	AHT-001	Engineering Physics	B.P.S	Dr. Balendra Pratap Singh
2	AHT-003	Mathematics-I	A.M	Dr. Ashish Mishra
3	EET-001	Basic Electrical Engineering	A.C	Mr. Abhishek Chakravorty
4	CST-001	Programming for Problem Solving	A.G	Dr. Ashish Gupta
5	AHT-004	Environmental Studies	T.U	Mrs. Tanuja Uniyal
6	AHP-001	Engineering Physics Lab	B.P.S	Dr. Balendra Pratap Singh
7	EEP-001	Basic Electrical Engineering Lab	A.C	Mr. Abhishek Chakravorty
8	CSP-001	Programming for Problem Solving Lab	A.G	Dr. Ashish Gupta
9	MEP-002	Engineering Graphics & Design Lab	A.J	Mr. Ankit Jain
10	AHP-003	Introduction to Digital Marketing lab	B.V	Mr. Brijmohan Vidhyarthi
11	AHP-005	Self Employment and Mentors	D.B	Mr. Durgesh Bahuguna
		LIBRARY	TU & BPS	Mrs. Tanuja Uniyal /Dr. Balendra Pratap Singh
			LIB	

Time Table Coordinator

(Mr. Deepak Chandola)

HoD (A.S.E)

(Mr. Mukesh Pathela)

Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

Divyanshu
Director
Tula's Institute, Dehradun

TULA'S INSTITUTE, DEHRADUN
Even Semester (Session 2022-2023) Time Table
Department of Applied Sciences and Engineering

Name of Program: B.Tech (CSE)								Semester : II
Section : II-A								
Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30
Monday	CST-001 (L) AG D-201	EET-001 (L) A.C D-201	AHT-005 (L) A.M D-201	L U N C H	CSP-001(P) (G1), AG, D-201	CST-001 (T) AG., D-201	SPSSM,(G1) AM Library	
	EET-001 (L) A.C D-201	AHT-001 (L) BSP D-201	CST-001 (L) AG D-201		EEP-001(P) (G2), AC, D-201	AHT-001 (T) BSP D-201	SPSSM,(G2) NB D-201	
	AHT-001 (L) A.C D-201	AHT-005 (L) A.M D-201	AHT-001 (L) BSP D-201		MEP-002 (P) (G1), (A.J) I-201 AHP-001(P)(G2), (T.R) E-204	AHT-005(T),(G1) A.M. D-201 EET-001(T)(G2) AC F-104	LIBRARY	
Wednesday	EET-001 (L) A.C D-201	AHT-005 (L) A.M D-201	AHT-001 (L) BSP D-201		CST-001 (L) D-201	CSP-001 (P)(G2) AG D-201 EEP-001(P) (G1) SG		
	AHT-005 (L) A.M D-201	AHT-001 (L) BSP D-201	AHT-004 (L) S.G D-201		EET-001 (T) (G2) A.C, F- 104 AHT-005(T),(G1) A.M. D-201	EET-001 (L) A.C D-201	CST-001 (T) (G2) AG D-201 AHT-001(T) (G1) BPS E-201	AHP-003 (P) (G1) A.A (E-302 SS
	CST-001 (L) AG D-201	AHT-005 (L) A.M D-201	AHT-004 (L) S.G D-201		AHP-001(P)(G2), (T.R) E-204	AHT-001 (L) BSP D-201	AHP-005 (P) (G2) D.B, D-201 AHP-003 (P) (G1) A.A, E-302	
Friday	AHT-005 (L) A.M D-201	AHT-001 (L) BSP D-201	AHT-004 (L) S.G D-201		MEP-002 (P) (G2) (A.J) I-201			
	AHT-005 (L) A.M D-201	AHT-001 (L) BSP D-201	EET-001(L) A.C D-201					
Saturday								

S.No	Course Code	Name of Course
1	AHT-001	Engineering Physics
2	AHT-005	Analytical Mathematics
3	EET-001	Basic Electrical Engineering
4	CST-001	Programming for Problem Solving
5	AHT-004	Environmental Studies
6	AHP-001	Engineering Physics Lab
7	EEP-001	Basic Electrical Engineering Lab
8	CSP-001	Programming for Problem Solving Lab
9	MEP-002	Engineering Graphics & Design Lab
10	AHP-003	Introduction to Digital Marketing lab
11	AHP-005	Self Employment and Entrepreneurship Development lab
12	SPSSM	Student's Personal Problem Solving With
13	LIB	Library

Faculty code	Name of Faculty Member
B.P.S	Dr. Balendra Pratap Singh
A.M	Dr. Ashish Mishra
A.C	Mr. Abhishek Chakroborty
AG	Mr. Arpit Goel
S.G	Dr. Shagun Gupta
T.R	Mr. Tikaram
A.C	Mr. Abhishek Chakroborty
AG	Mr. Arpit Goel
A.J	Mr. Ankit Jain
A.A	Dr. Abdal Ahmad
D.B	Mr Durgesh Bahuguna
	Dr. Ashish Mishra & Dr. Neelima
S.K.S	Dr. Sanket Kumar Saxena

Time Table Coordinator
(Mr. Deepak Chandola)

HoD (A.S.E)
Department of Applied Sciences & Engineering
(Mr. Mukesh Pathela)

Director
Tula's Institute, Dehradun

TULA'S INSTITUTE, DEHRADUN								
Even Semester (Session 2022-2023) Time Table								
Department of Applied Sciences and Engineering								
Name of Program: B.Tech (CSE)								Semester : II
Section : II-B								
Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30
Monday	AHT-001 (L) BSP D-202	AHT-005 (L) DC D-202	CST-001 (L) A.G D-202	EET-001 (L) VB D-202	CST-001 (L) A.G D-202	CSP-001 (P)(G1) AG EEP-001(P) (G2) BV		
Tuesday	EET-001 (L) VB D-202	CST-001 (L) A.G D-202	AHT-005 (L) DC D-202	AT-005 (T) (G1), DC, CST-001(TWG2), AG D- 202 / F-104	AHT-004 (L) S.G D-202	CSP-001 (P)(G1) AG EEP-001(P) (G2) BV		
Wednesday	AHT-001 (L) BSP D-202	AHT-005 (L) DC D-202	CST-001 (L) A.G D-202	MEP-002 (P) (G1), A.J, 1-201 AHP-001(P)(G2), TR, E-204	EET-001 (T) (G2) BV, D- 202 AHT-001(T),(G1) BPS, E-204	AHP-003 (P) (G1) A.A, E-302 AHT-001(T),(G1) BPS, E-204	AHP-005 (P) (G2) D.B, D-202	
Thursday	MEP-002 (P) (G1), A.J, 1-201 AHP-001(P)(G2), TR, E-204		AHT-001 (L) BSP D-202	EET-001 (L) VB D-202	LIBRARY	AT-005 (T) (G1), DC, CST-001(TWG2), AG D- 202 / F-104	AHP-005 (P) (G1) D.B, E-202 AHP-003 (P) (G2) A.A, E-302	
Friday	CST-001 (L) A.G D-202	AHT-005 (L) DC D-202	AHT-001 (L) BSP D-202	EET-001 (L) VB D-202	EET-001 (T) (G1) BV, D- 202 AHT-001(T),(G2) BPS, E-204	PDP	SPSSM (G1) NJU Library SPSSM (G2) SM D-202	
Saturday	AHT-005 (L) DC D-202	AHT-001 (L) BSP D-202	EET-001 (L) BV D-202					
S.No	Course Code	Name of Course			Faculty code	Name of Faculty Member		
1	AHT-001	Engineering Physics			B.P.S	Dr. Balendra P Singh		
2	AHT-005	Analytical Mathematics			DC	Mr Deepak Chandola		
3	EET-001	Basic Electrical Engineering			B.V	Mr Brinmohan Vidhyarthi		
4	CST-001	Programming for Problem Solving			A.G	Dr Ashish Gupta		
5	AHT-004	Environmental Studies			S.G	Dr. Shagun Gupta		
6	AHP-001	Engineering Physics Lab			T.R	Mr T Barani		
7	EET-001	Basic Electrical Engineering Lab			B.V	Mr Brinmohan Vidhyarthi		
8	CSP-001	Programming for Problem Solving Lab			A.G	Mr Ashish Gupta		
9	MEP-002	Engineering Graphics & Design Lab			A.J	Mr. Ankit Jain		
10	AHP-003	Introduction to Digital Marketing lab			A.A	Dr. Abdul Ahmad		
11	AHP-005	Self Employment and Entrepreneurship Development Lab			D.B	Mr Durgesh Bahuguna		
12	SPSSM	Student's Personal Problem Solving With Mentors				Mr. Sanoj Mandal & Ms. Naviyoti		
13	LIB	Library			LIB	Mr. Sanoj Mandal		

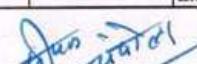
[Signature]
Time-Table Coordinator
(Mr. Deepak Chandola)

[Signature]
HoD (A.S.E)
(Mr. Mukesh Pathela)

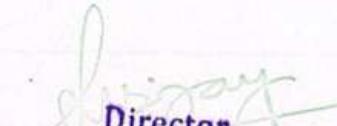
[Signature]
Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

[Signature]
Director
Tula's Institute, Dehradun

TULA'S INSTITUTE, DEHRADUN									
Even Semester (Session 2022-2023) Time Table									
Department of Applied Sciences and Engineering									
Name of Program: B.Tech (CSE)									
Section : II-B									
Semester : II									
Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30	
Monday	EET-001 (L) A.C D-203	CST-001 (L) A.G D-203	AHT-005 (L) DC D-203		AHT-001 (L) BSP D-203	AHT-005 (T) (G2) ADC D-203	MEP-002 (P) (G1), A.J, I-201		
Tuesday	CST-001 (L) A.G D-203	EET-001 (L) A.C D-203	AHT-004 (L) S.G D-203		AHT-001 (L) BSP D-203	EET-001 (T) (G1) SG D- 203	AHP-003 (P) (G2) A.A, E-302	SPSSM,(G1) SN D-203	
Wednesday	CST-001 (L) A.G D-203	EET-001 (L) A.C D-203	AHT-005 (L) DC D-203	L U N C H	EET-001 (T) (G1) SG D- 203	AHP-003 (P) (G1) A.A, E-302	AHT-004 (L) S.G D-203	PDP	
Thursday	AHT-005 (L) DC D-203		CSP-001 (P)(G1) AG		AHT-001 (L) BSP D-203	AHT-005 (T) (G1) ADC D-203	MEP-002 (P) (G2), AJ, I-201		
			EEP-001(P) (G2) SG			CST-001(T) (G2) AG F-104	AHP-001(P)(G1), TR, E-204		
Friday	AHT-001 (L) BSP D-203	CST-001 (L) A.G D-203	AHT-005 (L) DC D-203		EET-001 (L) A.C D-203	CSP-001 (P)(G2) AG	LIBRARY		
Saturday	AHT-001 (L) BSP D-203	AHT-005 (L) DC D-203	EET-001 (L) A.C D-203			EEP-001(P) (G1) SG			
S.No	Course Code	Name of Course							
1	AHT-001	Engineering Physics						Faculty code	
2	AHT-005	Analytical Mathematics						B.P.S	
3	EET-001	Basic Electrical Engineering						D.C	
4	CST-001	Programming for Problem Solving						A.C	
5	AHT-004	Environmental Studies						A.G	
6	AHP-001	Engineering Physics Lab						S.G	
7	EEP-001	Basic Electrical Engineering Lab						T.R	
8	CSP-001	Programming for Problem Solving Lab						A.C	
9	MEP-002	Engineering Graphics & Design Lab						A.G	
10	AHP-003	Introduction to Digital Marketing lab						A.J	
11	AHP-005	Self Employment and						A.Ah	
12	Spssm	Student's Personal Problem Solving						D.B	
13	Library							LIB	


Time Table Coordinator
(Mr. Deepak Chandola)


HoD (A.S.E)
(Mr. Mukesh Pathela)


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Tula's Institute, Dehradun

Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

TULA'S INSTITUTE, DEHRADUN								
Even Semester (Session 2022-2023) Time Table								
Department of Applied Sciences and Engineering								
Name of Program: B.Tech Sec D Section : II-B								Semester : II
Day/Period	I 9:40-10:30	II 10:30-11:20	III 11:30-12:20	IV 12:20-01:10	V 01:10-02:00	VI 02:00-02:50	VII 02:50-03:40	VIII 03:40-04:30
Monday	AHT-005 (L) P.C D- 204	ECT-001 (L) M.P D-204	AHT-002 T.K D-204		AHT-002 (T) (G1) AHT-005 (T) (G2) D-204 / E-204	MET-001 A.G D-204	PDP	CSP-002 (P) (G1) AHP-004 (P) (G2) F-104 / D-204
Tuesday	AHT-005 (L) P.C D- 204	ECT-001 (L) M.P D-204	MET-001 A.G D-204		ECT-001 (T) (G2) MET-001 (T) (G1) D-204	CSP-002 (P) (G2) AHP-004 (P) (G1) F-104 / D-204		AHP-002 (P) (G1) S.K.S MEP-003 (P) (G2) A.G E-104 / I-204
Wednesday	ECT-001 (T) (G1) MET-001 (T) (G2) D-204 / E-204		ECP-001 (P) (G1) R.N AHP-006 (P) (G2) N.S E- 302 / Lab- 5		MET-001 A.G D-204	AHT-002 T.K D-204		Mep-001 (P) (G1) A.G Library J-101
Thursday	AHT-002 T.K D-204	AHT-005 (L) P.C D- 204	ECT-001 (L) M.P D-204		ECP-001 (P) (G2) R.N AHP-006 (P) (G1) N.S E- 302 / Lab- 5			Mep-001 (P) (G2) A.G Library J-101
Friday	AHT-005 (L) P.C D- 204	AHT-002 T.K D-204	ECT-001 (L) M.P D-204		MET-001 A.G D-204	AHT-002 (T) (G2) AHT-005 (T) (G1) D-204 / E-204		AHP-002 (P) (G2) S.K.S MEP-003 (P) (G1) A.G E-104 / I-204
Saturday (Remedial Classes for slow learner)	AHT-005 (L) P.C D- 204	AHT-002 T.K D-204	ECT-001 (L) M.P D-204					
S.No	Course Code	Name of Course						
1	AHT-005	Analytical Mathematics						
2	ECT-001	Basic Electronics Engineering						
3	AHT-002	Engineering Chemistry						
4	MET-001	Basic Mechanical Engineering						
5	ECP-001	Basic Electronics Engineering LAB						
6	AHP-002	Engineering Chemistry LAB						
7	MEP-001	Basic Mechanical Engineering LAB						
8	AHP-006	English Language LAB						
9	AHP-004	Emerging Technology in Engineering						
10	MEP-003	Workshop Practice LAB						
11	CSP-002	Computer Application and IOT						
12	SPSSM							
13	Library							

*Time Table Coordinator
(Mr. Deepak Chandola)*

*HoD (A.S.E)
(Mr. Mukesh Pathela)*

Department of Applied Sciences & Engineering
Tula's Institute, Dehradun

Director
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Odd Semester (Session 2022-2023) Time Table

Name of Program: B. Tech Computer Science and Engineering					Semester: III		
Section: A	Coordinator:	Mr. Sanjay Kumar					
	I	II	III	IV	V	VI	VII
	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40
MON	BCST-305(L) AJ H-301	BCST-302(L) SM H-301	BCSP-305(P)(A1)- AG LAB-7 BCST-302(T)(A2) SM H-301	BECT-303(T)(A2) SKW H-301		BCST-303 (L) ST H-301	BCSP-306(P)(A1) NC LAB-7 BASP-107(INT)(A2) AS H-301
TUE	BCST-305(L) AG H-301	BCST-303(L) ST H-301	BCSP-305(P)(A2)- AG LAB-7 BECT-303(T)(A1) SKW H-301	BCST-302(T)(A1) SM H-301	BCET-301(L) DS H-301	Minor Degree AJ/ Programming	C
WED	BCST-303(L) ST H-301	BCST-305(L) AG H-301	BCST-302 (L) SM H-301	BECT-303(L) SKW H-301	BCET-301(L) DS H-301	BECP-303(P)(A1) RN LAB E-301	
THU	BECT-303(L) SKW H-301	BCST-305(L) AG H-301	BCST-302 (L) SM H-301	BECT-303(L) SKW H-301	BCET-301(L) DS H-301	BCSP-303(P)(A2) ST LAB-7	
FRI	BECT-303(L) SKW H-301	BCST-303(T)(A1) ST, H-301 BCST-305(T)(A2) AG H-206	BCST-302 (L) SM H-301	BCST-303(T)(A2) ST, H-301 BCST-305(T)(A1) AG H-206	BCST-303(L) ST H-301	BECP-303(P)(A2) BCSP-306(P)(A2) NC LAB-7 BASP-107(INT)(A1) AS H-301/	
S.No	Course Code	Name of Course		Faculty Member Code	Name of Faculty Member		
1	BCST-302	Discrete Structure		SM	Mr. Saroj Mandal		
2	BCST-303	Data Structure		ST	Mr. Sanjay Kumar		
3	BECT-303	Digital Electronics		SKW	Mr. Sandeep Khantwal		
4	BCST-305	Object Oriented Programming & Methodology		AG	Mr. Arpit Goel		
5	BCET301	Energy and Environmental Engineering		DS	Dr. Sanket		
6	BCSP-306	Computer Workshop Lab(Python)		NC	Ms. Neha Chauhan		
7	BCSP-303	Data Structure Lab		ST	Mr. Sanjay Kumar		
8	BECP-303	Digital Electronics Lab		RN	Mr. Rahul Negi		
9	BCSP-305	OOPS Lab		AG	Mr. Arpit Goel		
10	BASP 107	Internship(Seminar)		AS	Ms. Akansha Srivastava		
11	VAC	C Programming Lab		KG	Mr. Kuldeep Gusain		

Name of Coordinator

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Department of Computer Sciences & Engineering
Tula's Institute, Dehradun

Head, CSE Dept.

Tula's Institute, Dehradun

Odd Semester (Session 2022-2023) Time Table
Department of Computer Science and Engineering

Name of Program: B. Tech Computer Science and Engineering

Semester: III

Section: B	Coordinator: Ms. Pratibha Dimri							
Date/Period	I	II	III	IV	V	VI	VII	VIII
	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30
MON	BCET-303(L) SKW H-302	BCST-303(L) PD H-302	BCST-302 (L) SM H-302	BCET-301(L) DS H-302	BCST-305(L) AJ H-302	BCST-303(T)(B1) PD H-302	BCST-305 (T) AJ (B1) H-302	BCST-305 (T)
TUE	BCET-303(L) SKW H-302	BCST-305(L) AJ H-302	BCET-301(L) DS H-302	BCST-303(L) PD H-302	BCST-302(T)(B1) SM H-302	BECP-303(P)(B2)	LAB E-301	LAB E-
WED	BCET-303(L) SKW H-302	BCST-302 (L) SM H-302	BASP-107(INT)(B1) AS Lab -7	BCSP-303(P)(B2) PD LAB-7	BCST-303(T)(B2) SKW H-206	Minor Degree(AJ)/ C Programming		
THU	BCST-305(L) AJ H-302	BCST-303(L) PD H-302	BASP-107(INT)(B2) AS Lab -7	BCSP-303(P)(B1) JC LAB-7	BCST-302 (L) SM H-302	BCSP-306(P)(B1) AK LAB-7		
FRI	BCST-303(L) PD H-302	BCST-302 (L) SM H-302	BCST-305(L) AJ H-302	BCET-301(L) DS H-302	BCET-303(L) SKW H-302	BCSP-305(P)(B2)- AJ LAB-3	BCSP-306(P)(B2) AK LAB-7	BCST-303(T)(B2)
					BCST-305 (T) AJ (B2) H-302	BCST-302(T)(B2) SM H-302	BCST-305(P)(B1) SKW H-401	BCST-303(T)(B2) PD H-302
							BECP-303(P)(B1) SKW LAB E-301	
S.No	Course Code	Name of Course			Faculty Member Code	Name of Faculty Member		
1	BCST-302	Discrete Structure			SM	Mr. Sanoj Mandal		
2	BCST-303	Data Structure			PD	Ms. Pratibha Dimri		
3	BCET-303	Digital Electronics			SKW	Mr. Sandeep Khuntwal		
4	BCST-305	Object Oriented Programming & Methodology			AJ	Dr. Ahmad Jamal		
5	BCET301	Energy and Environmental Engineering			DS	Dr. Sunket		
6	BCSP-306	Computer Workshop Lab(Python)			GSB	Mr. Girish Singh Bisht		
7	BCSP-303	Data Structure Lab			PD	Ms. Pratibha Dimri		
8	BECP-303	Digital Electronics Lab			PB	Ms. Parvati Bhandari		
9	BCSP-305	OOPS Lab			AJ	Dr. Ahmad Jamal		
10	BASP 107	Internship(Seminar)			AS	Ms. Akansha		
11		C Programming Lab			KG	Mr. Kuldeep Gusain		

Name of Coordinator:

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Department of Computer Sciences & Engineering
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Head, CSE Dept.

Tula's Institute, Dehradun

Odd Semester (Session 2022-2023) Time Table
Department of Computer Science and Engineering

Name of Program: B. Tech Computer Science and Engineering

Section: C

Semester: III

Date/Period	I	II	III	IV	V	VI	VII	VIII
	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30
MON	BCST-305(L) BK H-404	III-C BECT-303(L) PB H-404	BCST-303(L) AKG H-404	BCST-302 (L) AK H-404	L	III-C2 BCST-305(T) BK H-404	BCSP-303(P) C2 AKG H-404 LAB-5	
TUE	BCST-305(L) BK H-404	BCST-303(L) AKG H-404	III-C BECT-303(L) PB H-404	BCST-302 (L) AK H-404	U	BCST-302(T)(C1) AK H-302	BCSP-306(P)(C1) AKG LAB-5	
WED	BCST-305(L) BK H-404	III-C BECT-303(L) PB H-404	BCST-303(L) AKG H-404	BCET-301(L) DS H-404	N	BCST-302(T)(C2) AK H-302	Minor Degree AJ/ C Programming	
THU	BCET-301(L) DS H-302	BCST-302 (L) AK H-404	BECP-303(P)(C1) PB LAB E-301	BCSP-305(P)(C2) BK LAB-7	C	III-C1 BCST-305(T) AJ H-404	BASP-107(INT)(C1+C2) BK Lab -5	
FRI	BCST-305(L) BK H-404	BECT-303(L) PB H-404	BCST-303(L) AKG H-404	BCST-302 (L) AK H-404	H	III-C2 BECT-303(T) P H-404	BCSP-303(P) C1 AKG LAB-5	
						BCST-303(T) C1 AG H-404	BCSP-306(P)(C2) AKG LAB-5	
						BCET-301(L) DS H-404	BECP-303(P)(C2) PB LAB E-301	
							BCSP-305(P)(C1) BK LAB-7	

S.No	Course Code	Name of Course	Faculty Member Code	Name of Faculty Member
1	BCST-302	Discrete Structure	AK	Mr. Alok
2	BCST-303	Data Structure	AKG	Dr. Anand Kumar Gupta
3	BECT-303	Digital Electronics	PB	Ms. Parvati Bhandari
4	BCST-305	Object Oriented Programming & Methodology	BK	Dr. Bharti Kalra
5	BCET301	Energy and Environmental Engineering	DS	Dr. Sanket
6	BCSP-306	Computer Workshop Lab(Python)	AKG	Mr. A.K. Gupta
7	BCSP-303	Data Structure Lab	AKG	Dr. Anand Kumar Gupta
8	BECP-303	Digital Electronics Lab	PB	Ms. Parvati Bhandari
9	BCSP-305	OOPS Lab	BK	Dr. Bharti Kalra
10	BASP 107	Internship(Seminar)	BK	Dr. Bharti Kalra
11		C Programming Lab	KG	Mr. Kuldeep Gusain

Name of Coordinator

Director
Tula's Institute, Dehradun

HoD

Department of Computer Sciences & Engineering
Tula's Institute, Dehradun

Odd Semester (Session 2022-2023) Time Table

Department of Computer Science and Engineering

Name of Program: B. Tech Computer Science and Engineering								Semester: V			
Coordinator: Mr. B. K Sharma											
Section :A	I	II	III	IV	V	VI	VII	VIII			
Day/Period	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30			
MON	BCST-506(P)(A1) AA LAB-7		BCST-503(L) BKS H-303		BCSP-501(P)(A1) RK LAB-7		BCST-501(L) RK H-303	BCST-502(L) DSK H-303			
	BCSP-502(P)(A2) DSK LAB-7										
TUE	BCST-506(P)(A2) AA LAB-7		BCST-504(L) GSB H-303		BCSP-501(P)(A2) RK LAB-7		BCST-501(L) RK H-303	BCST-501(A1) PJ H-204			
	BCSP-502(P)(A1) DSK Lab 7										
WED	BCST-503(L) BKS H-303	BCST-502(L) DSK H-303	BCST-504(L) GSB H-303	L	BCST-502(T)(A2) DSK H-303	BOCS-505(L) MAK H-204	BCST-508 (A1+A2) MAK H-303	BCST-502(L) DSK H-303			
				U							
THU	BOCS-505(L) RM H-303	BCST-503(L) BKS H-303	BCST-504(L) AK H-303	N	BOCS-505(T)(A1) RM H-303	BOCS-505(L) MAK H-303	BCST-501(L) RK H-303	BCST-501(A2) RK H-303			
				C							
FRI	BCST-503(L) BKS H-303	BCST-502(L) DSK H-303	BCST-504(L) GSB H-303	H	BCST-504(C) (T)(A2) GSB 204	BOCS-505(T)(A1) H-303	BCST-501(L) RK H-303	BCST-503(T)(A1) BKS H-204			
S.No	Course Code	Name of Course			Faculty Member Code	Name of Faculty Member					
1	BCST-501	Operating System			RK	Mr. Rakesh Kumar					
2	BCST-502	Computer Networks			DSK	Dr. Sandeep Kumar					
3	BCST-503	Design and Analysis of Algorithms			BKS	Mr. B. K Sharma					
4	BCST-504 (C)	Internet and web Technology (Departmental Elective-I)			GSB	Mr Girish Singh Bisht					
5	BOCS-505 (C)	Cyber Security(Open Elective-I)			RM	Ms. Rashmi Mishra					
6	BCSP-501	Operating System Lab			RK	Mr Rakesh Kumar					
7	BCSP-502	Computer Networks Lab			DSK	Dr. Sandeep Kumar					
8	BCSP-503	Design and Analysis of Algorithms Lab			BKS	Mr. B. K Sharma					
9	BCST-506	Virtual Lab(UNIX/LINUX/PYTHON/JAVA etc)			AA	Mr. Aizaz Ahmad					
10	BCST-508	Internship-II			HC	Ms. Harshita Chaudhary					
11		C Programming Lab			KG	Mr. Kuldeep Gusain					

Director
Tula's Institute, Dehradun

HoD
Department of Computer Sciences & Engineering
Tula's Institute, Dehradun

Tula's Institute, Dehradun

Odd Semester (Session 2022-2023) Time Table
Department of Computer Science & Engineering

Name of Program: B. Tech Computer Science and Engineering

Semester: V

Section: B		Coordinator: Mr. Sanjay Tyagi							
Day/Period	I	II	III	IV	V	VI	VII	VIII	
	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30	
MON	BCST-503(L) SJ H-304	BCST-501(L) AA H-304	BCST-504(T)(B2) H-204 NC	BCST-504(L) NC H-304	BOCS-505(T)(B1) MAK H-304	BOCS-505(L) HC H-304	BCST-502(L) SP H-304	BCST-508 (B1+B2) RM H-303	
	BCST-504(L) NC H-304	BCST-501(L) AA H-304	BCST-503(L) BKS H-304		BCST-504(L) NC H-304	BOCS-505(L) HC H-304	BCST-502(T)(B1) PR H-204	BCST-502(L) PR H-304	
TUE	BCSP-502(P)(B1) SP LAB-7	BCST-503(L) SJ H-304	BCSP-503(P)(B1) SJ LAB-7	BCSP-501(P)(B2) AA LAB-7	BCST-503(T)(B2) SJ H-304	BCST-503(T)(B2) SJ H-304	BCST-501-(T)(B1) AA H-304	BCST-501-(T)(B1) AA H-304	
	BCST-506(P)(B2) MB LAB-7				BCSP-503(P)(B2) SJ LAB-7	BCST-502(L) SP H-304	BOCS-505(C)(T)(B2) HC H-204	BOCS-505(C)(T)(B2) HC H-204	
WED	BCSP-502(P)(B2) SP LAB-7	BCST-501(L) PJ H-304	BCSP-503(P)(B2) SJ LAB-7	BCSP-501(P)(B1) AA LAB-7	BCST-501(P)(B1) SJ LAB-7	BOCS-505(L) HC H-304	BCST-508 (B1+B2) RM H-303	BCST-508 (B1+B2) RM H-303	
	BCST-506(P)(B1) MB LAB-7				BCSP-503(P)(B2) SJ LAB-7	BCST-501(P)(B1) AA LAB-7	BCST-501-(T)(B2) AA H-204	BCST-502(L) SP H-304	
THU	BCST-504(L) NC H-304	BCST-501(L) AA H-304	BOCS-505(L) HC H-304	BCST-503(L) SJ H-304	BCST-504(T)(B1) NC H-304	BCST-503(T)(B1) SJ H-304	BCST-502(L) SP H-304	BCST-502(L) SP H-304	
	BCSP-501 Operating System	Computer Networks	Design and Analysis of Algorithms		BCST-502(T)(B2) SP H-204	BCST-501-(T)(B2) AA H-204			
S.No	Course Code	Name of Course			Name of Faculty Member		Faculty Member Code		
1	BCST-501	Operating System			Mr. Aizaz Ahmad		AA		
2	BCST-502	Computer Networks			Ms. Shivali Pundir		SP		
3	BCST-503	Design and Analysis of Algorithms			Ms. Suchi Jain		SJ		
4	BCST-504 (B)	Internet and web Technology (Departmental Elective-I)			Ms. Neha Chauhan		NC		
5	BOCS-505 (C)	Cyber Security(Open Elective-I)			Ms. Harshita Chaudhary		HC		
6	BCSP-501	Operating System Lab			Mr. Aizaz Ahmad		AA		
7	BCSP-502	Computer Networks Lab			Ms. Shivali Pundir		SP		
8	BCSP-503	Design and Analysis of Algorithms Lab			Ms. Suchi Jain		SJ		
9	BCST-506	Virtual Lab(UNIX/LINUX/PYTHON/JAVA etc)			Ms. Manvi Bohra		MB		
10	BCST-508	Internship-II			Ms. Rashmi Mishra		RM		
11		C Programming Lab			Mr. Kuldeep Gusain		KG		

Name of Coordinator:

Director
Tula's Institute, Dehradun

HoD Head, CSE Dept
Department of Computer Sciences & Engineering
Tula's Institute, Dehradun

Tula's Institute, Dehradun.

Odd Semester (Session 2022-2023) Time Table

Department of Computer Science and Engineering

Name of Program: B. Tech Computer Science and Engineering						Semester -VII		
Section: A	Coordinator:	Mr. Anurag Kumar						
Day/Period	I	II	III	IV	V	VI		
	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50		
Mon	BCST-704(L) AS H-401	BCSP-701(P)(A1) JC LAB 3		BCST-704(T)(A1) AS H-401	BCST-702(L) RP H-401	Internship A1+A2 DSK		
		BCSP-702(P)(A2) RP LAB-3		BCST-701(T)(A2) JC H-204				
TUE	BCST-702(L) RP H-401	BCST-701(L) PC H-401	BCST-703(L) SP H-401	BCST-703(T)(A2) SP H-204	BCST-704(L) AS H-401	BCST-702(T)(A2) RP H-301		
				BCST-701(T)(A1) PC H-401				
WED	BCST-701(L) JC H-401	BCST-702(L) RP H-401	BCSP-705 Virtual Lab (A1 + A2) LAB 3		BCST-703(L) SP H-401	Internship A1+A2 AKG		
THU	BCST-701(L) JC H-401	BCST-703(L) SP H-401	BCST-702(L) RP H-401	BCST-704(L) AS H-401	BCSP-707 Minor Project(A1+A2) LAB-3			
FRI	BCST-701(L) JC H-401	BCST-704(T)(A2) AS H-204	BCST-703(L) SP H-401	BCST-704(L) AS H-401	BCSP-702(P)(A1) RP LAB-3			
		BCST-702(T)(A1) RP H-401			BCSP-701(P)(A2) JC LAB 3			
S.no	Course Code	Name of Course			Name of Faculty Member	Faculty Member Code		
1	BCST-701	.NET Framework and Programming			Ms. Jigyasha Chandokh	JC		
2	BCST-702	Adhoc and Wireless Networks			Mrs. Ritu Pal	RP		
3	BCST-703	Internet-of-Things -Systems(Departmental Elective)			Ms. Shivali Pundir	SP		
4	BCST-704	Big Data(Open Elective)			Ms. Akansha Srivastav	AS		
5	BCSP-701	.NET Framework and Programming Lab			Ms. Jigyasha Chandokh	JC		
6	BCSP-702	Adhoc and Wireless Networks Lab			Mrs. Ritu Pal	RP		
7	BCSP-705	Virtual Lab			Dr. Sanjeev Kumar	DSK		
8	BCSP-707	Minor Project			Ms. Akansha Srivastav	AS		
9		Internship-III			Dr. Sandeep Kumar	DSK		

Name of Coordinator:

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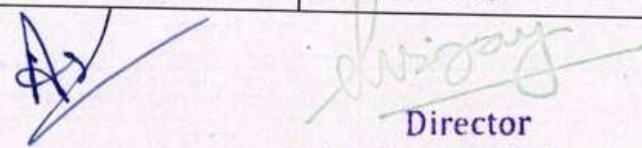
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Course Allotment

Tula's Institute, Dehradun
Department of Computer Science Engineering

Teaching Load For B. Tech CSE ODD Semester 2022-23 (09.11.2022)

S.No.	Name of Faculty	Branch/Year	Subject with code	L	T	P	Load
1	Dr. Sandip Vijay	M.Tech /1st year	Data Science	3		1	4
2	Mr. B. K Sharma	CSE/3rd year(A)	DAA(BCST-503)	4	2	4	10
3	Ms. Suchi Jain	CSE/3rd year(B)	DAA(BCST-503)	4	2	4	10
4	Mr. Sanjay Kumar	CSE/2nd year(A)	Data Structure(BCST-303)	4	2	4	10
5	Ms. Pratibha Dimri	CSE/2nd year(B)	Data Structure(BCST-303)	4	2	4	10
6	Dr. Sandeep Kumar	CSE/3rd year(A)	Computer Network(BCST-502)	4	2	4	14
		CSE-4th year(A,B)	Internship-III		0	4	
7	Dr. Ram Bhawan Singh	M.Tech /1st year	Introduction to Intelligent System	3	1	0	4
8	Ms. Rashmi Mishra	CSE/3rd year(A)	Cyber Security BOCS-505 (C)	4	2	0	10
		CSE/3rd year(B)	Internship-II	0	0	4	
9	Ms. Harshita Chaudhary	CSE/3rd year(A)	Internship-II	0	0	4	10
		CSE/3rd year(B)	Cyber Security BOCS-505 (C)	4	2	0	
10	Ms . Ritu Pal	CSE IV Year (A+B)	Ad-hoc & Wireless Network BCST-702	4	2	4	10
11	Mr. Rakesh Kumar	CSE/3rd year(A)	Operating System (BCST-501)	4	2	4	10
12	Mr. Aizaz Ahmad	CSE/3RD YEAR(A)	Virtual Lab(UNIX/LINUX/PYTHON,JAVA etc)	0	0	4	14
		CSE/3rd year(B)	Operating System (BCST-501)	4	2	4	
13	Dr. Bharti Kalra	CSE/2nd year(C)	BASP 107 Internship(Seminar)/C	0	0	2	10
		CSE/2nd year(C)	OOPS(BCST-305)	4	2	2	



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14	Ms. Manvi Bohra	Diploma	Comp. Fundamentals	4	1	2	11
		CSE/3RD YEAR(B)	Virtual Lab(UNIX/LINUX/PYTHON, JAVA etc)	0	0	4	
15	Ms. Shivali Pundir	CSE-3rd (B)	Computer Network(BCST-502)	4	2	4	16
		CSE-4th year(A+B)	IOT(BCST-703(D))	4	2	0	
16	Dr Ahmad Jamal	CSE/2nd year(B)	OOPS(BCST-305)	4	2	4	10
17	Mr. Arpit Goel	CSE/2nd year(A)	OOPS(BCST-305)	4	2	4	10
18	Mr.Girish Singh Bisht	CSE-3rd Year(A)	Intrenet & Web Technology	4	2	0	10
		CSE 2nd (B)	BCSP-306 Computer Workshop Lab(Python)	0	0	4	
19	Ms. Neha Chauhan	CSE-3rd Year(B)	Intrenet & Web Technology	4	2	0	10
		CSE 2nd (A)	BCSP-306 Computer Workshop Lab(Python)		0	4	
20	Dr Ashish Gupta	B.Tech-1st year (D)	CST001	4	2	4	10
21	Dr. A.K. Gupta	CSE/2nd year(C)	Data Structure(BCST-303)	4	2	2	10
		CSE/2nd year(C)	BCSP-306 Computer Workshop Lab(Python)		0	2	
23	Dr. Sanjeev Kumar	CSE/4th Year (A+B)	Virtual Lab(BCSP-705)	0	0	4	8
		M.Tech /1st year	Data Science	3		1	
24	Dr. Raghav Garg	M.Tech /1st year	Adv. Data Structure	3		1	4
25	Ms. Akansha	CSE-4th year(A+B)	Minor Project	0	0	4	12
		CSE-2nd(B)	BASP 107 Internship(Seminar)/C	0	0	2	
		CSE-4th year(A+B)	Big Data Processing BOCS-704(A)	4	2		
26	Ms. Jigyasha	CSE-4th year(A+B)	.Net Framework & Programming BCST-701	4	2	4	12
		CSE-2nd(B)	BASP 107 Internship(Seminar)/C	0	0	2	

AJD

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Course Allotment Policy in Computer Science & Engineering Department

Purpose: The purpose of this document to identify the HoD's position on affirmative action on departmental course allotment to the faculty members. Affirmative action is achieved by taking positive steps, by means of systematic management program, to identify past, present and future discrimination in semester course allotment.

The university creates and distributes an academic calendar well in advance of the commencement of the academic year. To ensure that academic tasks are completed on time, the Institute creates its own academic schedule in accordance with the University calendar.

Step 1: The Institute's activity schedule is listed in the academic calendar. The calendar includes a full schedule of holidays as well as other academic activities, such as quizzes, continuous internal exams, and extracurricular activities. It is made available at the start of each semester. In accordance with the Institute Calendar, the Department prepares an academic calendar that also accounts for the additional planning of events like FDPs, seminars, workshops, expert lectures, etc.

Step 2: Students and educators have access to the academic calendar electronically. The Academic Calendar must be closely followed by both students and educators in order for the academic activities to be successfully completed.

Step 3: If there is any change in the schedule due to unavoidable reasons, there is a provision of compensation with the approval of HoD/Director.

Course Allotment Process

At the starting of every academic semester, HoD will float a course option form within the department among the all-faculty members. This should be filled by all the faculty members to opt out the teaching courses of their choice throughout the semester to avoid any kind of discrimination.

Step 1: The course allocation is done one month prior to the beginning of the semester. The faculty members are asked for their choice of course by the time table coordinator. Finally, HoD assigns the courses to the faculty members based on their choice and expertise.

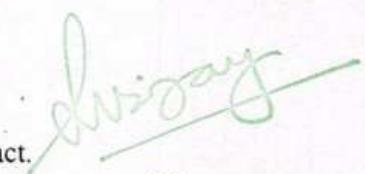
Step 2: Once the courses are allocated, the faculty members prepare a detailed course lesson plan for the courses.

Step 3: Course handouts and Course materials are prepared following the lesson plan and course outcomes.

Responsibility:

It is the responsibility of HoD to ensure.

- The implementation of this policy.
- That they are available as the first point of contact for information, advice and contact.



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- To Establish as technology driven teaching learning institution.
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- To Inculcate social, environmental, heritage values.

Sample Course File



COURSE RECORD

Academic Year: - 2022-23 (ODD Semester)

Faculty Name:	Dr. Sandeep Kumar
Course Title:	Computer Network (BCST-502)
Semester:	V (Section A)
Department:	Computer Science & Engineering

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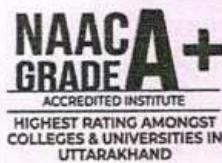


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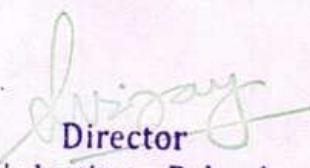
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2. Department's Vision & mission
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4. PEO, PO, PSO
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7. CO/PO/PSO Mappings
8. Gap Analysis
9. Individual Timetable
10. List of Students
11. Course Plan
12. Summary of Compensatory / Extra Classes Taken
13. Question Bank(Module-wise) & Previous Years University Question Papers
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15. Class Test
16. Continuous Internal Evaluations
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18. Result Analysis of CIE I
19. Advance and slow learner identification
20. Attainment - CO


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1. Institute's Vision & Mission

Institute's Vision

To emerge as an academic centre producing world class professionals, promoting innovation and research.

Institute's Mission

- IM-01:** To promote intellectual and skilled human capital generating employment and entrepreneurship.
- IM-02:** To be educational centre of excellence of multi ethnicity and diversity.
- IM-03:** To establish as a technology driven teaching learning institution.
- IM-04:** To provide world class platform for research and innovation.
- IM-05:** To inculcate social, environmental, heritage values.

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2. Department Vision & Mission

Department Vision

To become the centre of excellence in teaching, research and innovative practices for computing.

Department Mission

DM 1: To provide a learning ambience to enhance programming skills for problem solving.

DM 2: To integrate the software industry and academia in order to utilise technology for research, innovation and entrepreneurship.

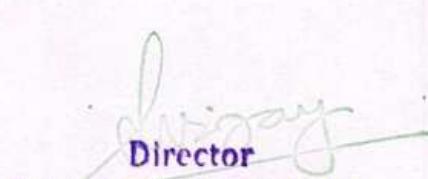
DM 3: To develop professionals with a solid foundation who can think outside the box to adapt green computing solution.

DM 4: To provide a comprehensive computing environment that meets the highest global standards for higher education and lifelong learning.

DM 5: To create ethical, skilled engineers through theoretical understanding and practical implementations.

Mapping of Institute's Mission with Department's Mission

	IM-01	IM-02	IM-03	IM-04	IM-05
DM-01	Y	-	-	-	-
DM-02	-	-	Y	-	-
DM-03	-	-	-	-	Y
DM-04	-	-	-	Y	-
DM-05	Y	Y	-	-	-


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3. Academic Calendar



ACADEMIC CALENDAR

Odd Semester

Session : 2022-2023

S.No.	Particulars	Date	Responsibility
1.	Distribution of Provisional class lists to teachers	14 August 2022	Concerned HoD
2.	Time Table Display on Notice Boards	16 August 2022	Concerned HoD
3.	Commencement of Classes 2 nd , 3 rd & 4 th Year	16 August 2022	Concerned HoD
4.	Commencement of Classes - 1 st year (Including orientation/ induction program)	05 September 2022	Concerned HoD
5.	Induction/ Orientation Ceremony	05-25 September 2022	Dr. Nisha Goyal Mr. Navneet Singh
6.	For VMSB UTU & UBTER 2 nd , 3 rd / 4 th Year	10-12 October 2022	Exam committee
7.	1 st CIE* For SDSUV 2 nd , 3 rd / 4 th Year	To be decided as per the University Exam dates	Exam committee
8.	1 st CIE* (For all First year students)	09-12 November 2022	Exam committee
9.	Technical Festival - Umaran 2022*	25-26 November 2022	Event Committee
10.	2 nd CIE * (For all First Year)	03-19 December 2022	Exam committee
11.	2 nd CIE * (For all First Year)	26-30 December 2022	Exam committee
12.	Theory Examinations* Collection of Admit Cards	To be announced later	Registrar/ Exam committee

CIE = Continuous Internal Evaluation

*May be revised as per UTUSDSUV/UBTER schedule.

[Signature]
 (Dr. Neelam Srivastava)
 Dean Academics



[Signature]
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Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission

- Promote intellectual and skilled human capital generation along theoretical and entrepreneurial
- Encourage centre of excellence of multi ethnicity and diversity.
- Research & technology driven teaching learning institution.
- Provide world class platform for research and innovation.
- Inculcate social, environmental, heritage values.

Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission:

- To Promote intellectual and skilled human capital generation employment and entrepreneurship.
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- To Establish as technology driven teaching learning institution.
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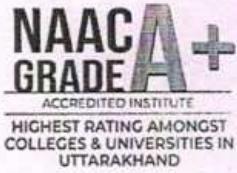
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4. Program Educational Objectives (PEOs)

PEO-1:

To provide the imperative knowledge of science and engineering fundamental concepts for a computer professional, software development, testing and networking.

PEO-2:

To inculcate ability in creativity & design of computer support systems and impart knowledge to become a successful software developer.

PEO-3:

To exhibit leadership capability, triggering social and economic commitment and inculcate community services.



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4.1 Program Outcomes (POs)

- PO-01:** **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO-02:** **Problem Analysis:** Identify, formulate, research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO-03:** **Design/development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO-04:** **Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO-05:** **Modern Tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- PO-06:** **The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO-07:** **Environment and Sustainability:** Understand the impact of the professional Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO-08:** **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO-09:** **Individual and Teamwork:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

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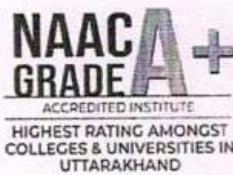
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PO-10:

Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO-11:

Project Management and Finance: Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO-12:

Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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4.2 Program Specific Outcomes (PSOs)

PSO-01: Provide programming paradigms through teaching learning facilities.

PSO-02: Provide ability to design and develop computing solutions.



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5. Course Learning Objectives & Course Outcomes

Course Learning Objectives:

1. Build an understanding of the fundamental concepts of computer networking.
2. Gain the basic taxonomy and terminology of the computer networking and enumerate the layers of OSI model and TCP/IP model.
3. Acquire knowledge of Application layer and Presentation layer paradigms and protocols.
4. Gain core knowledge of Network layer routing protocols and IP addressing.

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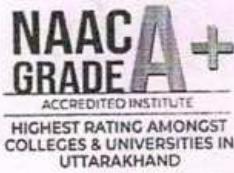


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Course Outcomes:

CO#	CO Description	Mapping of BL to CO	Mapping of Module to CO	PO Addressed by CO	Assessment Tool (s) to be used to attain. CO
CO-01	Apply the functionality of Layered Architecture of computer networking & layers Protocols for gaining Engineering Knowledge	BL-03	1,2,3	CO-01 maps to PO-01	Examination/Assignment
CO-02	Examine the performance of network based on the principles of routing Protocols.	BL-04	4	CO-02 maps to PO-02, PO-05	Examination /Assignment
CO-03	Ability to Identify the concept of data link layer protocols to detect the error in data Transmission.	BL-03	2	CO-03 maps to PO-01, PO-02	Examination/Assignment Tutorial /Quiz
CO-4	Apply appropriate addressing Techniques and sub-netting in IPV4 Protocol.	BL-03	4	CO-4 maps to PO-01, PO-05	Examination/Assignment Tutorial /Quiz
CO-5	Ability to Conduct Investigation to different types of services of data transfer using Transport layer protocols.	BL-04	5	CO-5 maps to PO-02	Examination/Assignment Tutorial /Quiz

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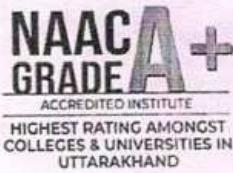
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6. COURSE SYLLABUS

Code	Subject Name	L	T	P	Credit
BCST-502	COMPUTER NETWORKS	3	1	0	4

Module	SYLLABUS	MAPPING WITH CO	MAPPING WITH BTL
M1	Computer Network: Definitions, goals, components, Architecture, Classifications & Types. Layered Architecture: Protocol hierarchy, Design Issues, Interfaces and Services, Connection Oriented & Connectionless Services, Service primitives, Design issues & its functionality. ISOOSI Reference Model: Principle, Model, Descriptions of various layers and its comparison with TCP/IP. Principals of physical layer: Media, Bandwidth, Data rate and Modulations	CO1	3
M2	Data Link Layer: Need, Services Provided, Framing, Flow Control, Error control. Data Link Layer Protocol: Elementary & Sliding Window protocol: 1-bit, Go-Back-N, Selective Repeat, Hybrid ARQ. Protocol verification: Finite State Machine Models & Petri net models. ARP/RARP/GARP.	CO1,C O3	3
M3	MAC Sub layer: MAC Addressing, Binary Exponential Back-off (BEB) Algorithm, Distributed Random Access Schemes/Contention Schemes: for Data Services (ALOHA and Slotted- ALOHA), for Local-Area Networks (CSMA, CSMA/CD, CSMA/CA), Collision Free Protocols: Basic Bit Map, BRAP, Binary Count Down, MLMA Limited Contention Protocols: Adaptive Tree Walk, Performance Measuring Metrics. IEEE Standards 802 series & their variant..	CO1	3
M4	Network Layer: Need, Services Provided, Design issues, Routing algorithms: Least Cost Routing algorithm, Dijkstra's algorithm, Bellman-Ford algorithm, Hierarchical Routing, Broadcast Routing, Multicast Routing. IP Addresses, Header format, Packet forwarding, Fragmentation and reassembly, ICMP, Comparative study of IPv4 & IPv6	CO2,C O4	3,4
M5	Transport Layer: Design Issues, UDP: Header Format, Per-Segment Checksum, Carrying Unicast/Multicast Real-Time Traffic, TCP: Connection Management, Reliability of Data Transfers, TCP Flow Control, TCP Congestion Control, TCP Header Format, TCP Timer Management. Application Layer: WWW and HTTP, FTP, SSH, Email (SMTP, MIME, IMAP), DNS, Network Management (SNMP)..	CO5	4

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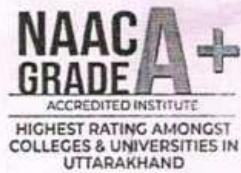


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Text Book

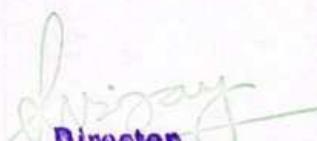
1. Michael A. Gallo and William M. Hancock "Computer communication and Networking Technology" Cengage Learning
2. Anuranjan Misra, "Computer Networks", Acme Learning 8. G. Shanmugaratnam," Essential of TCP/ IP", Firewall Media

References:

1. Forouzen, "Data Communication and Networking", TMH
2. A.S. Tanenbaum, "Computer Networks", 3rd Edition, Prentice Hall India, 1997.
3. S. Keshav, "An Engineering Approach on Computer Networking", Addison Wesley, 1997
4. W. Stallings, "Data and Computer Communication", Macmillan

NPTEL & REFERENCE PPT LINKS:

1. <https://nptel.ac.in/courses/106105183/>
2. <http://intronetworks.cs.luc.edu/current/ComputerNetworks.pdf>
3. <https://www.ece.uvic.ca/~itraore/elec567-13/notes/dist-03-4.pdf>
4. <http://www.eazynotes.com/notes/computer-networks/slides/types-of-networks.pdf>
5. <https://www.youtube.com/watch?v=UXMlxCYZu>
6. <https://www.youtube.com/watch?v=zzXs0EnCin0>



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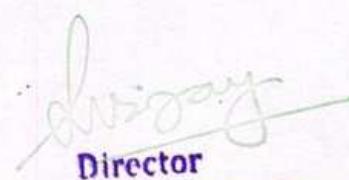
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7. CO PO and CO-PSO MAPPING

CO #	CO PO AND CO-PSO MAPPING												PSO		
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	
BCST.502.1	2	-	-	-	-	-	-	-	-	-	-	-	1	1	
BCST.502.2	-	2	-	-	2	-	-	-	-	-	-	-	-	2	
BCST.502.3	1	2	-	-	-	-	-	-	-	-	-	-	-	1	
BCST.502.4	2	-	-	-	3	-	-	-	-	-	-	1	-	2	
BCST.502.5	-	2	-	-	-	-	-	-	-	-	-	1	-	2	
WT.AVG	1.67	2.00			2.50								1.00	1.00	1.60
OVERALL MAPPING OF COURSE														1.63	

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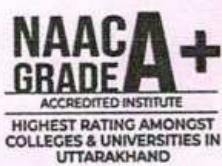


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8. Gap Analysis

Subject: Computer Networks (BCST-502)

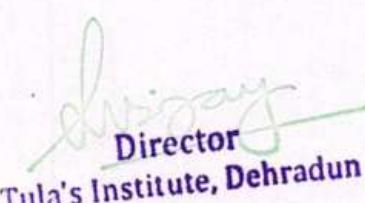
Session: 2022-2023

8(a). Gap Identification:

Curriculum gaps in computer network syllabus include inadequate coverage of security, emerging technologies, QoS, network management, hands-on experience, current industry trends, and ethical/legal considerations. Addressing these gaps would better prepare students for real-world networking challenges.

Dr. Sandeep Vijay

HoD
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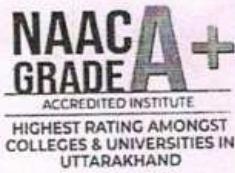


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8(b): Content Beyond Syllabus

S.No.	Topic	CO	PO	PSO
1	Advanced Routing Protocols	2	1,4	2
2	High-Performance Networking	4	4	2
3	Performance Examination of Routing Protocols	2	4	2
4	Addressing Techniques and Subnetting in IPv4	1	1	2

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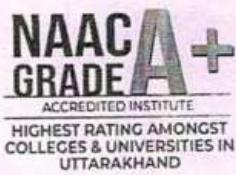


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Excel Class Attendance for Filling the Identified Gap

S.No.	Roll Number	Name of Student	Topic-1	Topic-2	Topic-3	Topic-4
			23/11/22	25/11/22	26/11/22	28/11/22
			QOS	Network management	current industry trends	ethical/legal considerations
1	200120101001	AARUSH	A	P	P	P
2	200120101002	ABHAY SAHU	P	P	A	P
3	200120101003	ABHIJEET KUMAR	P	P	P	P
4	200120101004	ABHISHEK PAL	P	A	P	P
5	200120101005	ABHISHEK RAJ	A	P	P	A
6	200120101006	ABHISHEK RAJ SINGH	P	P	P	P
7	200120101007	ABHISHEK RAWAT	P	P	P	P
8	200120101008	ABHISHEK SARASWAT	P	P	P	P
9	200120101009	ADITYA CHOUDHARY	P	A	P	P
10	200120101010	ADITYA KUMAR	P	P	P	A
11	200120101011	ADITYA KUMAR	P	P	A	P
12	200120101012	AKASH GIRI	P	P	P	P
13	200120101013	AKASH PATWAL	A	P	P	P
14	200120101014	AMAAN ANSARI	P	A	P	A
15	200120101015	AMAN ISHWAR	P	P	P	P
16	200120101016	AMAN KUMAR MALAIYA	P	P	P	P
17	200120101017	AMIT BHARDWAJ	P	P	P	P
18	200120101018	ANJALI PRASAD	P	P	P	P
19	200120101019	ANKIT JHA	A	P	P	P
20	200120101020	ANKIT KUMAR	P	A	A	P
21	200120101021	ANKIT KUMAR	P	P	P	P
22	200120101022	ANKIT KUMAR RAI	P	P	P	A
23	200120101023	ANKIT RAWAT	P	P	P	P
24	200120101024	ANURAG RAJ	P	P	P	P
25	200120101025	ANUSHKA.	P	A	P	P
26	200120101026	ANUSHKARAJKASHYAP	P	P	P	P
27	200120101027	Arpan Bharti	A	P	P	P
28	200120101028	ARPIT GOYAL	P	P	P	P
29	200120101029	ARPIT KUMAR	P	P	P	P
30	200120101030	ARVINDSINGHARPURIA	P	P	P	P
31	200120101031	ARYAN RAJ	P	P	A	P
32	200120101032	ATUL KUMAR	P	P	P	P
33	200120101033	AVINASH KUMAR JHA	P	P	P	P

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34	200120101034	AVNISH SINGH	P	P	P	P
35	200120101035	AWADESH .	A	P	P	P
36	200120101036	AWANISHPRATAPSINGH	P	P	P	P
37	200120101037	AYUSH A DUBEY	P	P	P	P
38	200120101038	AYUSH SHYAMLA	P	A	P	P
39	200120101039	BIKASH KUMAR	P	P	P	P
40	200120101040	BIKASH SAH	P	P	P	A
41	200120101041	BINIT KUMAR KARN	P	P	P	P
42	200120101042	BINOD JOSHI	P	P	P	P
43	200120101043	BISHAL KUMAR YADAV	A	P	P	P
44	200120101044	DHEERAJ SINGH	P	A	A	P
45	200120101045	DHIRENDRA SINGH	P	P	P	P
46	200120101046	GAUTAM KUMAR YADAV	P	P	P	P
47	200120101047	GOURAV BOHRA	P	P	P	P
48	200120101048	HARSH KASHIWAL	P	P	P	P
49	200120101049	HARSH RAJ	P	P	P	P
50	200120101050	HARSH UPADHYAY	P	P	P	P
51	200120101051	HARSHIT KUMAR	P	P	P	P
52	200120101052	HIMANSHU RANJAN	P	P	P	P
53	200120101053	IMRAN AHMED	P	P	A	P
54	200120101054	JAI DHIMAN	P	P	P	P
55	200120101055	KARTIKEYSINGHSENGR	P	P	P	P
56	200120101056	LOVE PRATAP	P	P	P	P
57	200120101057	MANAS NEGI	P	P	P	P
58	200120101058	MANAV .	P	A	P	P
59	200120101059	MANIKANT KUMAR	P	P	P	P
60	200120101060	MANISH KUMAR	A	A	P	P
61	200120101061	MANSI RAY	P	P	P	A
62	200120101062	MD AARIF	P	P	P	P
63	200120101063	MOHD.AFROZANSARI	A	P	A	P
64	200120101064	NITESH KUMAR	P	P	P	P

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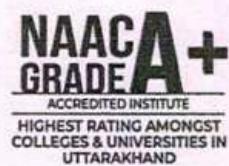
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9. Individual Time table

Day/Period	I	II	III	IV	V	VI	VII	VIII
	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30
MON		BCSP-502(P) (A2) LAB-7					Internship A1+A2 DSK	BCST-502(L) H-303
TUE		BCSP-502(P) (A1) LAB-7						
WED		BCST-502(L) H-303			BCST-502(T)(A2) H-303			BCST-502(L) H-303
THU								
FRI		BCST-502(L) H-303						BCST- 502(T)(A1) H-303

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10. List of Students

S.NO.	Roll no	Student Name
1	200120101001	AARUSH
2	200120101002	ABHAY SAHU
3	200120101003	ABHIJEET KUMAR
4	200120101004	ABHISHEK PAL
5	200120101005	ABHISHEK RAJ
6	200120101006	ABHISHEK RAJ SINGH
7	200120101007	ABHISHEK RAWAT
8	200120101008	ABHISHEK SARASWAT
9	200120101009	ADITYA CHOUDHARY
10	200120101010	ADITYA KUMAR
11	200120101011	ADITYA KUMAR
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15	200120101015	AMAN ISHWAR
16	200120101016	AMAN KUMAR MALAIYA
17	200120101017	AMIT BHARDWAJ
18	200120101018	ANJALI PRASAD
19	200120101019	ANKIT JHA
20	200120101020	ANKIT KUMAR
21	200120101021	ANKIT KUMAR
22	200120101022	ANKIT KUMAR RAI
23	200120101023	ANKIT RAWAT
24	200120101024	ANURAG RAJ
25	200120101025	ANUSHKA .
26	200120101026	ANUSHKARAJKASHYAP
27	200120101027	Arpan Bharti
28	200120101028	ARPIT GOYAL
29	200120101029	ARPIT KUMAR
30	200120101030	ARVINDSINGHPURIA
31	200120101031	ARYAN RAJ
32	200120101032	ATUL KUMAR
33	200120101033	AVINASH KUMAR JHA

S.NO	Roll no	Student Name
34	200120101034	AVNISH SINGH .
35	200120101035	AWADESH .
36	200120101036	AWANISHPRATAPSINGH
37	200120101037	AYUSH A DUBEY
38	200120101038	AYUSH SHYAMLA
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62	200120101062	MD AARIF
63	200120101063	MOHD.AFROZANSARI
64	200120101064	NITESH KUMAR

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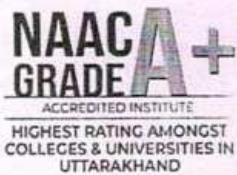
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11. Course Plan

Course Name: Computer Network Sec-A

Course Code: BCST-502

Lecture Plan				Lecture Delivered	
S.No	Planned Date	LP No.	Topic	Actual Date	Teaching Methodology
1	17-08-2022	L1	Module-1: Computer Network: Definitions, goals, components, Architecture	17/08/22	Lecture
2	17-08-2022	L2	Design Issues, Interfaces and Services	17/08/22	Lecture
3	22-08-2022	L3	Classifications & Types. application ,presentation layer session layer	22/08/22	Lecture
4	24-08-2022	L4	Types of topologies	24/08/22	Lecture
5	24-08-2022	L5	Design issues & its functionality. ISOOSI Reference Model:	24/08/22	Lecture
6	26-08-2022	L6	Responsibility of Physical layer	26/08/22	Lecture
7	27-08-2022	L7	Responsibility of data link layer	27/08/22	Lecture
8	29-08-2022	L8	Responsibility of network layer	29/08/22	Lecture
9	31-08-2022	L9	Functions of transport layer	31/08/22	Lecture
10	31-08-2022	L10	Ckt switching & packet switching	31/08/22	Lecture (Telipos)
11	05-09-2022	L11	Module-2: Data Link Layer: Need, Services Provided Framing	05/09/22	Lecture
12	07-09-2022	L12	Flow Control, Error control	07/09/22	Problem based lecture
13	07-09-2022	L13	Data Link Layer Protocol:	07/09/22	Lecture

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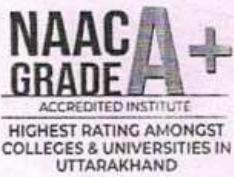
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14	08-09-2022	L14	Elementary & Sliding Window protocol	08/09/22	flipped class zoom
15	09-09-2022	L15	1-bit, Go-Back-N, Selective Repeat	09/09/22	lecture
16	14-09-2022	L16	Hybrid ARQ Protocol verification	14/09/22	lecture
17	14-09-2022	L17	Finite State Machine Models & Petri net models.	14/09/22	lecture (Test paper)
18	15-09-2022	L18	ARP/RARP/GARP	15/09/22	lecture
19	16-09-2022	L19	Module-3: MAC Sub layer: MAC Addressing	16/09/22	flipped class
20	19-09-2022	L20	Binary Exponential Back-off (BEB) Algorithm	19/09/22	lecture
21	21-09-2022	L21	Distributed Random Access Schemes/Contention Schemes	21/09/22	lecture
22	21-09-2022	L22	for Data Services (ALOHA and Slotted- ALOHA)	21/09/22 23/09/22	lecture
23	23-09-2022	L23	for Local-Area Networks (CSMA, CSMA/CD, CSMA/CA)	24/09/22	lecture
24	24-09-2022	L24	Collision Free Protocols	26/09/22	flipped class
25	26-09-2022	L25	Basic Bit Map	28/09/22	lecture
26	28-09-2022	L26	BRAP, Binary Count Down	28/09/22	lecture
27	28-09-2022	L27	MLMA Limited Contention Protocols:	29/09/22	lecture

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28	29-09-2022	L28	Adaptive Tree Walk, Performance Measuring Metrics	30/09/22	<i>Lecture (Test)</i>
29	30-09-2022	L29	IEEE Standards 802 series & their variant.	01/10/22	<i>Flipped class</i>
30	07-10-2022	L30	Module-4: Network Layer: Need, Services Provided	08/10/22	<i>Directed Discussion</i>
31	08-10-2022	L31	Design issues	10/10/22	<i>Lecture</i>
32	10-10-2022	L32	Routing algorithms:	12/10/22	<i>Lecture</i>
33	12-10-2022	L33	Least Cost Routing algorithm	12/10/22	<i>Lecture</i>
34	12-10-2022	L34	Dijkstra's algorithm	14/10/22	<i>Lecture</i>
35	14-10-2022	L35	Bellman-ford algorithm	17/10/22	<i>Lecture</i>
36	17-10-2022	L36	Hierarchical Routing, Broadcast Routing	19/10/22	<i>Lecture</i>
37	19-10-2022	L37	Multicast Routing	19/10/22	<i>Lecture</i>
38	19-10-2022	L38	IP Addresses, Header format	20/10/22	<i>Lecture</i>
39	20-10-2022	L39	Packet forwarding & subnetting	21/10/22	<i>Lecture</i>
40	21-10-2022	L40	Subnetting	22/10/22	<i>Problem Based Learning</i>
41	22-10-2022	L41	Comparative study of IPv4 & IPv6	31/10/22	<i>Lecture</i>
42	31-10-2022	L42	IPv6, Per-Segment Checksum	2/11/22	<i>Lecture (Test Paper)</i>

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43	02-11-2022	L43	Module-5: Transport Layer:	21/11/22	<u>Lecture</u>
44	02-11-2022	L44	Carrying Unicast	11/11/22	<u>Lecture</u>
45	11-11-2022	L45	Multicast Real-Time Traffic, TCP	12/11/22	<u>Lecture</u>
46	12-11-2022	L46	Connection Management	13/11/22	<u>Lecture</u>
47	14-11-2022	L47	UDP	15/11/22	<u>Lecture</u>
48	15-11-2022	L48	Three Way Handshaking	16/11/22	<u>Lecture</u>
49	16-11-2022	L49	Reliability of Data Transfers	16/11/22	<u>Lecture</u>
50	16-11-2022	L50	Design Issues	18/11/22	<u>Directed Discussion</u>
51	18-11-2022	L51	UDP: Header Format	21/11/22	<u>Flipped class</u>
52	21-11-2022	L52	Application Layer	23/11/22	<u>Lecture / Test</u>
53	23-11-2022	L53	Presentation layer	23/11/22	<u>Lecture</u>
54	23-11-2022	L54	Excel class	25/11/22	<u>Lecture</u>
55	25-11-2022	L55	Excel class	26/11/22	<u>Lecture</u>
56	26-11-2022	L56	Excel class	28/11/22	<u>Lecture</u>
57	28-11-2022	L57	Excel class	29/11/22	<u>Lecture</u>
58	29-11-2022	L58	Revision & Presentation	30/11/22	<u>Problem Based</u>
59	30-11-2022	L59	Revision & Presentation	30/11/22	<u>Lecture</u>
60	30-11-2022	L60	Revision & Presentation	01/12/22	<u>Lecture</u>
Total Classes			Planned: 60	Delivered:	61

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Teaching Methodology:

- | | | | |
|-------|--|-------|-------------------------|
| i. | Lecture | ii. | Interactive Lecture |
| ii. | Directed Discussion | iv. | Directed Instruction |
| v. | Guided Instructions | vi. | Just-in-Time Teaching |
| vii. | Experiential Learning | viii. | Case-Based Learning |
| ix. | Inquiry-based or inquiry-guided Learning | x. | Problem-Based Learning |
| xii. | Project-Based Learning | xii. | Research-Based Learning |
| xiii. | Role-Plays and Simulations | xiv. | Flipped- Classroom |

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TUTORIAL PLAN FOR A2

Course Name: Computer Networks

Course Code: BCST-502

Tutorial Plan			Tutorial Delivered	
S.No.	Planned Date	Tutorial Sheet No.	Actual Date	Tutorial Type
6.	24-Aug-22	T1	24/08/22	01
7.	31-Aug-22	T2	31/08/22	01
8.	7-Sep-22	T3	07/09/22	03
9.	14-Sep-22	T4	14/09/22	03
10.	19-Oct-22	T5	19/10/22	02
Total Tutorials:		Planned: 05	Delivered:	

Tutorial Types:

- 1. Discussion-based tutorials
- 2. Problem-solving tutorials
- 3. Review and Q&A tutorials
- 4. Student-Led Objective Tutorial (SLOT)

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TUTORIAL PLAN FOR A1

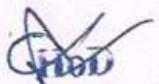
Course Name: Computer Networks

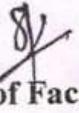
Course Code: BCST-502

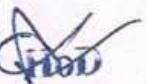
Tutorial Plan			Tutorial Delivered	
S.No.	Planned Date	Tutorial Sheet No.	Actual Date	Tutorial Type
1.	19-Aug-22	T1	19/08/22	01
2.	26-Aug-22	T2	26/08/22	01
3.	9-Sep-22	T3	9/09/22	03
4.	16-Sep-22	T4	16/09/22	01
5.	21-Oct-22	T5	21/09/22	03
Total Tutorials:		Planned: 05	Delivered:	

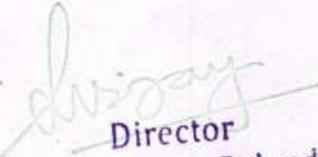
Tutorial Types:

1. Discussion-based tutorials
2. Problem-solving tutorials
3. Review and Q&A tutorials
4. Student-Led Objective Tutorial (SLOT)


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12. Summary of Compensatory & Extra Classes Taken

SNo	Month	Extra Class		Leave Details		
		Date	LP No.	Date of CL/EL/OD	Date of Compensatory Class taken	LP No.
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						
13.						
14.						
15.	Nov	02/11/24	02			
16.						
17.						
18.						

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13. Question Bank

S.No	Question	Blooms Taxonomy Level	Course Outcomes
Module-1: Computer Network: Definitions, goals, components, Architecture Design Issues, Interfaces and Services Classifications & Type, application , presentation layer session layer Types of topologies, Design issues & its functionality, ISOOSI Reference Model: Responsibility of Physical layer, Responsibility of data link layer, Functions of transport layer, Ckt switching & packet switching.			
INTRODUCTION TO PHYSICAL LAYER			
	Part - A(Short Answer Questions)		
1	State two disadvantages of twisted pair cables.	Understand	CO 1
2	Define packet switching?	Understand	CO 1
3	Define Data rate?	Understand	CO 1
4	List two advantages and two disadvantages of bus topology in network.	Remember	CO 1
5	State Nyquist Bit Rate?	Understand	CO 1
6	List two advantages of layering principle in computer networks?	Remember	CO 1
7	Explain the role of ARPANET in computer networks?	Understand	CO 1
8	Distinguish between baseband transmission and broadband transmission?	Remember	CO 1
9	Define network.	Remember	CO 1
10	List different types of networks?	Understand	CO 1
11	Discuss why are protocols needed?	Remember	CO 1
12	Discuss two points to improve the performance of network?	Understand	CO 1
13	What is meant by topology? Name some popular topologies?	Understand	CO 1
14	Define switching?	Understand	CO 1
15	Describe Why are standards needed?	Understand	CO 1
16	Write the importance about MAN?	Understand	CO 1
17	Describe the Noise?	Understand	CO 1
18	Write a short note on WAN?	Understand	CO 1
19	List the Transmission Impairments?	Remember	CO 1
20	Discuss on Distortion?	Understand	CO 1

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Part - B (Long Question)			
1	Describe TCP/IP Model? Explain the functions of protocols.	Understand	CO 1
2	Distinguish the OSI and TCP/IP Reference Models	Remember	CO 1
3	Define computer networks? Describe various types of networks topologies in computer network. Also discuss various advantages and disadvantages of each topology.	Understand	CO 1
4	Define switching? Explain circuit switching?	Remember	CO 1
5	Apply three types of transmission impairment in network?	Apply	CO 4
6	Distinguish between baseband transmission and broadband transmission?	Understand	CO 2
7	Define switching? Explain packet switching?	Understand	CO 1
8	With a neat sketch explain ISO/OSI reference model? Evaluate the performance also.	Evaluate	CO 3
9	Define topology and apply the various topologies to the network?	Apply	CO 4
10	Discuss and compare various types of networks.	Remember	CO 1
11	List out and explain are the applications of Computer Networks?	Understand	CO 1
12	Define OSI Model? Explain the functions and protocols and services of each layer?	Understand	CO 1
13	Evaluate the performance of the following:- a)LAN b)MAN c)WAN d)ARPANET	Evaluate	CO 3
14	Explain how are OSI and ISO related to each other?	Remember	CO 1
15	Differentiate four basic topologies? With diagrams.	Understand	CO 1
16	Explain Shannon Capacity with example	Understand	CO 1
17	Evaluate Nyquist Bit Rate with example?	Understand	CO 1
18	Define Bit Rate and explain factors effects the bit rate?	Understand	CO 1
19	List the layers of the TCP/IP reference model with neat explanation.	Understand	CO 1

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Part - C (Analytical Questions)			
1	Calculate the maximum bit rate? Consider a noiseless channel with a bandwidth of 3000 Hz transmitting a signal with two signal levels.	Apply	CO 4
2	Imagine a signal travels through a transmission medium and its power is reduced to half. This means $p_2 = (1/2) p_1$. Calculate Attenuation.	Analyze	CO 3
3	Consider a telephone line normally has a bandwidth of 3000 Hz (300 to 3300 Hz) assigned for data communications. The signal-to-noise ratio is usually 3162. Calculate the channel capacity for this channel?	Evaluate	CO5
4	Consider the difference between circuit switching and packet switching. Assume the link's rate is 2 Mbps and users are generating data at a rate of 100 Kbps when busy. Users are busy only 1% of time. What is the maximum number of users that a circuit switching architecture can support simultaneously?	Analyze	CO 3
5	A network with bandwidth of 10 Mbps can pass only an average of 12,000 frames per minute with each frame carrying an average of 10,000 bits. What is the throughput of this network?	Apply	CO4
6	For a wavelength in vacuum of 1550 nm, the corresponding frequency is $f = c/\lambda = (3 * 10^8)/(1550 * 10^{-9}) = 193.4 * 10^{12}$ = 193.4 THz. for a typical single mode fiber, the velocity of propagation is approximately $v = 2.04 * 10^8$. Find out Wavelength of the Fiber optic cable.	Evaluate	CO 5
7	Calculate the total time required to transfer a 1.5MB file in the following cases, assuming a RTT of 80 ms, a packet size of 1 KB data, and an initial $2 \times$ RTT of hand shaking" before data is Sent. The bandwidth is 10Mbps.	Analyze	CO3
8	Consider a point-to-point link 50 km in length. At what bandwidth would propagation delay (at a speed of 2×10^8 m/sec) equal transmit delay for 100 - byte packets? What about 512-byte packets?	Apply	CO 4
9	Suppose you are designing a sliding window protocol for a 1-Mbps point to-point link to the stationary satellite revolving around Earth at 3×10^4 km altitude. Assuming g that each frame carries 1 KB of data, what is the minimum number of bits you need for the sequence number in the following cases? Assume the speed of light is 3×10^8 meters per second. (a)RWS=1. (b) RWS=SWS.	Evaluate	CO5
10	Imagine a signal travels through a transmission medium and its power is reduced to half. This means $p_2 = (1/2) p_1$. Calculate Attenuation.	Analyze	CO 3

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Module-2: Data Link Layer: Need, Services Provided, Framing, Flow Control, Error control, Data Link Layer Protocol: Elementary & Sliding Window protocol, 1-bit, Go-Back-N, Selective Repeat, Hybrid ARQ. Protocol verification, Finite State Machine Models & Petri net models, ARP/RARP/GARP

INTRODUCTION TO Data Link Layer

S.No	QUESTION	Blooms Taxonomy Level	Course Outcomes
Part - A (Short Answer Questions)			
1	What is redundancy?	Remember	CO 1
2	What is vulnerable period?	Understand	CO 1
3	List three categories of multiple access protocols?	Understand	CO 1
4	Define CSMA and CDMA?	Understand	CO 1
5	List out the available error detection methods.	Understand	CO 1
6	What is an exponential back off?	Understand	CO 1
7	What are the responsibilities of data link layer?	Remember	CO 1
8	Mention the types of errors.	Understand	CO 1
9	Define bridge?	Understand	CO 1
10	Write a short note on Hub?	Remember	CO 1
11	Describe the functionalities of router?	Understand	CO 1
12	Define ALOHA?	Understand	CO 1
13	Describe checksum?	Understand	CO 1
14	What is HDLC?	Understand	CO 1
15	Explain VLAN?	Understand	CO 1
16	Write short notes on CRC generator	Understand	CO 1
17	How performance is improved in CSMA/CD protocol compared to CSMA protocol?	Understand	CO 1
18	Give data transfer modes of HDLC?	Understand	CO 1
19	What is vulnerable time?	Understand	CO 1
20	Distinguish between FDMA and TDMA?	Understand	CO 1

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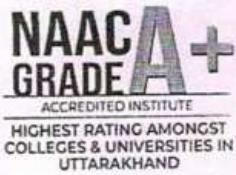
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Part - B (Long Answer Questions)			
1	Compare and contrast Go back N and selective Repeat with their performance evaluation.	Evaluate	CO 2
2	List and briefly discuss the two different basic transmission technologies.	Understand	CO 1
3	How many types of frames HDLC uses? Explain briefly?	Understand	CO 1
4	What is pure ALOHA and slotted ALOHA? Consider the delay of both at low load. Which one is less? Explain your answer.	Remember	CO 1
5	Explain the working of carrier sense multiple access protocol? Where it can be apply?	Apply	CO 4
6	Evaluate the back-off time of PURE ALOHA protocol?	Evaluate	CO 3
7	Explain in details the types of bridges.	Remember	CO 1
8	State and explain the functions of MAC.	Understand	CO 1
9	How performance is improved in CSMA/CD protocol compared to CSMA. How to evaluate.	Evaluate	CO 4
10	How CSMA/CA differs from CSMA/CD. Explain in brief?	Remember	CO 1
12	Explain Error Control & Flow Control.	Understand	CO 1
13	Why collision is an issue in a random access protocol but not in controlled access or channelizing protocols?	Understand	CO 1
14	Compare and contrast a controlled access protocol with a channelizing protocol.	Analyze	CO 5
15	Do we need a multiple access protocol when we use the local loop of the telephone company to access the internet? Explain.	Understand	CO 1
16	Write short notes on CRC.	Understand	CO 1
17	Analyze are the steps followed in checksum generator?	Analyze	CO 5
18	Define parameter 'a'? How does it affect the performance of the CSMA.	Understand	CO 1
19	Explain Virtual Local Area Network with its performance?	Evaluate	CO3
20	Define ALOHA? What are the different types of ALOHA	Understand	CO 1

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Part - C (Analytical Questions)

1	Derive the Laplace transform of the message delay in FDMA in which every message contains a random number of packets. Compare the expected message delay with that of TDMA?	Evaluate	CO 5
2	A network with one primary and four secondary stations uses polling. The size of a data frame is 1000 bytes. The size of the poll, ACK and NAK frames are 32 bytes each. Each station has 5 frames to send. How many total bytes are exchanged if there is no limitation on the number of frames a station can send in response to a poll?	Apply	CO 4
3	Find CRC for $P = 110011$ and $M = 1100011?$	Evaluate	CO 5
4	One hundred stations on a pure ALOHA network share a 1-Mbps channel. If frames are 1000 bits long, find the throughput if each station is sending 10 frames/sec?	Analyze	CO 3
5	Calculate the hamming distance for each of the following code words? i. d(10000,01000) ii. d(10101, 10010) iii. d(1111,1111) iv. d(0000,0000)	Evaluate	CO 5

Module-3: MAC Sub layer: MAC Addressing, Binary Exponential Back-off (BEB) Algorithm, Distributed Random Access Schemes/Contention Schemes, for Data Services (ALOHA and Slotted- ALOHA), for Local-Area Networks (CSMA, CSMA/CD, CSMA/CA), Collision Free Protocols, Basic Bit Map, BRAP, Binary Count Down, MLMA Limited Contention Protocols: Adaptive Tree Walk, Performance Measuring Metrics, IEEE Standards 802 series & their variant.

THE NETWORK LAYER

Part - A (Short Answer Questions)

1	State quality of service?	Remember	CO 1
2	List the classifications of the adaptive algorithms?	Remember	CO 1
3	List the classifications of the non-adaptive algorithms?	Understand	CO 1
4	Write the keys for understanding the distance vector routing.	Understand	CO 1
5	Define Flooding?	Understand	CO 1
6	What is meant by routing algorithm?	Remember	CO 1
7	Give a note on optimality principle?	Understand	CO 1
8	Define Adaptive routing algorithms?	Understand	CO 1
9	Define Non-Adaptive routing algorithms?	Remember	CO 1
10	What is congestion control?	Understand	CO 1
11	Define Traffic shaping?	Remember	CO 1
12	State on Leaky bucket algorithm?	Understand	CO 1
13	Define Load shedding?	Understand	CO 1
14	What are the design issues of network layer?	Understand	CO 1
15	List network support layers and the user support layers?	Remember	CO 1
16	State store and forward?	Understand	CO 1
17	Illustrate shortest path?	Remember	CO 1
18	Write the keys for understanding the link state routing.	Understand	CO 1
19	List the requirements of the routing algorithms?	Understand	CO 1
20	List the three variants of the internetworking?	Understand	CO 1

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Part - B (Long Answer Questions)			
1	How the routers get the information about neighbor?	Understand	CO 1
2	How the packet cost referred in distance vector and link state routing?	Remember	CO 1
3	Describe the Routing Information protocol and Distance vector routing.	Understand	CO 1
4	Explain Leaky bucket algorithm?	Understand	CO 1
5	Describe the Traffic Shaping?	Understand	CO 1
6	Evaluate the performance of non-adaptive algorithms?	Evaluate	CO 5
7	Apply the Flooding algorithms in Computer network?	Apply	CO4
8	List the fields of an IPv4 datagram header that participate in fragmentation and reassembly.	Understand	CO 1
9	Explain the link state routing algorithm with an example?	Understand	CO 1
10	State the major difference between Distance Vector Routing and Link state	Understand	CO 1
11	Apply congestion control mechanism in network?	Apply	CO4
12	Analyze Internet Protocol with the neat block diagram of IP header format?	Analyze	CO 3
13	List and explain the features of the IPv6 Protocol?	Understand	CO 1
14	Explain the IP packet format with neat diagram?	Remember	CO 1
15	Describe the IPv6 packet format?	Understand	CO 1
16	Explain the datagram delivery and forwarding in internet protocol?	Understand	CO 1
17	Find the class of each IP address. Give suitable explanation. i) 227.12.14.87 ii) 193.14.56.22 iii) 14.23.120.8 iv) 252.5.15.111 v) 134.11.78.56 vi) 172.18.58.1	Understand	CO 1
18	Explain ICMPv6 protocol?	Understand	CO 1
19	Explain about Internet Control Message Protocol?	Understand	CO 1
20	Define BGP Protocol. Describe its routing functionality in detail?	Understand	CO 1
21	Write the following MASKS in slash notation (/n)? a) 255.0.0.0 b) 255.255.224.0 c) 255.255.255.0 d) 255.255.240.0	Apply	CO 4
22	Why are we running out of IPv4 addresses? How does IPv6 solve this problem?	Remember	CO 1
23	Find the class of the following IP addresses? a) 237.14.2.1 b) 208.35.54.12 c) 129.14.6.8 d) 114.34.2.8	Apply	CO 4

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Part - C (Analytical Questions)			
1	Design the autonomous system with the following specifications : a. There are 8 networks (N1 to N8) b. There are 8 routers (R1 to R8) c. N1, N2, N3, N4, N5 and N6 are Ethernet LANs	Evaluate	CO 5
2	Consider a host using leaky bucket strategy for traffic shaping. The host sends a burst data at a rate of 15Mbps for first 3 seconds and remains silent for 2 seconds. Then again a burst data at a rate of 6 Mbps is send for next 2 seconds and then the host remains silent for next 2 seconds. Now again the host sends data at rate of 5 Mbps for next 3 seconds. What will be the output data rate of the leaky bucket?	Apply	CO 4
3	Design the autonomous system with the following specifications : N7 and N8 are point to point WANs a. R1 connects N1 and N2 b. R2 connects N1 and N7 c. R3 connects N2 and N8	Analyze	CO 3

Module-4: Network Layer: Need, Services Provided, Design issues, Routing algorithms: Least Cost Routing algorithm, Least Cost Routing algorithm, Dijkstra's algorithm, Bellman-ford algorithm, Hierarchical Routing, Broadcast Routing, Multicast Routing, IP Addresses, Header format, Packet forwarding & subnetting, Subnetting, Comparative study of IPv4 & IPv6, IPV6, Per-Segment Checksum.

THE TRANSPORT LAYER

Part - A (Short Answer Questions)

1	List out functions of transport layer?	Understand	CO 1
2	Define Multi-protocol router?	Understand	CO 1
3	List out duties of the transport layer?	Understand	CO 1
4	Define TCP? Or Reliable byte stream	Understand	CO 1
5	Differentiate between network layer delivery and the	Remember	CO 1
6	What are the different fields in pseudo header?	Understand	CO 1
7	Define quality of service?	Understand	CO 1
8	Explain the main idea of UDP? Or Simple De multiplexer	Understand	CO 1
9	List the timers used by TCP.	Understand	CO 1
10	How an application process running in one host is addressed by another process through TCP?	Remember	CO 1
11	Describe datagram format of UDP?	Understand	CO 1
12	What is traffic shaping?	Understand	CO 1
13	State two protocols available at transport layer?	Understand	CO 1
14	List out various congestion avoidance techniques?	Understand	CO 1
15	Distinguish between contention and congestion?	Understand	CO 1
16	Define tunneling?	Understand	CO 1
17	State the four major aspects of reliable delivery at the	Understand	CO 1
18	How check sum is calculated in TCP?	Understand	CO 1
19	What is CODE BITS in TCP header?	Understand	CO 1
20	State the use of SYN and FIN bits in TCP?	Understand	CO 1

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Part - B (Long Answer Questions)			
1	Explain the real transport protocol of UDP and how will you calculate checksum in UDP.	Understand	CO 1
2	Draw neatly the TCP segment format and describe each of it.	Understand	CO 1
3	List out the network performance characteristics.	Understand	CO 1
4	Describe the adaptive retransmission policy in detail.	Understand	CO 1
5	Apply the TCP connection establishment and termination.	Apply	CO 4
6	Describe the three way handshake protocol to establish the transport level connection.	Understand	CO 1
7	Draw TCP state transition diagram and describe each of it.	Understand	CO 1
8	Give a detailed note on connection establishment?	Remember	CO 1
9	Discuss about the TCP sliding window algorithm for flow	Understand	CO 1
10	Write congestion control algorithms and describe how it works.	Understand	CO 1
11	Explain leaky bucket and token bucket algorithm.	Understand	CO 1
12	Distinguish UDP & TCP with suitable example?	Understand	CO 1
13	Describe congestion avoidance techniques in detail?	Understand	CO 1
14	List major types of networks and Evaluate the performance for each.	Evaluate	CO 5
15	Illustrate data units at different layers of the TCP / IP protocol suite?	Understand	CO 1
16	What is the difference between TCP and UDP?	Understand	CO 1
17	Draw UDP header format with an example.	Remember	CO 1
18	Explain transport layer services and its applications.	Understand	CO 1
19	Explain the method congestion? Write a note on how to control congestion?	Remember	CO 1
20	What is multiplexing? Explain with diagram	Understand	CO 1

Part - C (Analytical Questions)

1	An end system sends 50 packets for second using UDP over a full duplex mode 100 Mbps Ethernet LAN Connection. Each packet consists of 1500 Bytes of the Ethernet frame payload data. What is the throughput when measured at UDP protocol?	Apply	CO4
2	Assume each packet has typical TCP and IP headers each 20bytes long. If we have three computers, A, B and C. The link between A and B has an MTU of 3000 bytes, while the link between B and C has an MTU of 1000 bytes. Consider the case where a packet needs to be sent from A to C that has a size of 3000 bytes (including headers). How many fragments will we have from B to C, and how much data will be in each fragment (i.e. excluding headers)? (all connections are assumed to be Ethernet)	Evaluate	CO 5
3	A TCP connection is using a window size of 12000 bytes and the previous acknowledgement number was 22001. It receives a segment with acknowledgement number 24001 and window size advertisement of 12000. Design a diagram to show the situation of the window before and after?	Analyze	CO 5
4	A client uses UDP to send data to a server. The data are 15bytes. Calculate the efficiency of this transmission at the UDP level (ratio of useful bytes to total bytes)?	Apply	CO4

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Module-5: Transport Layer: Carrying Unicast, Multicast Real-Time Traffic, TCP, Connection Management, UDP, Three Way Handshaking, Reliability of Data Transfers, Design Issues, UDP: Header Format, Application Layer, Presentation layer.

INTRODUCTION TO APPLICATION LAYER

Part - A (Short Answer Questions)

1	Explain Internet Transport Protocols?	Understand	CO 1
2	What is the purpose of Domain Name System?	Remember	CO 1
3	State advantages of stateless server of HTTP?	Understand	CO 1
4	Define message Formatting?	Understand	CO 1
5	Discuss the three main division of the domain name space.	Remember	CO 1
6	Differentiate between FTP & HTTP?	Remember	CO 1
7	Discuss the basic model of FTP.	Understand	CO 1
8	Explain the need of Uniform Resource Locator in WWW.	Understand	CO 1
9	List two applications of Application Layer?	Remember	CO 1
10	Explain DNS Name Space?	Remember	CO 1
11	List the advantages of Email?	Understand	CO 1
12	Define SNMP?	Understand	CO 1
13	Explain the concept of Telnet?	Remember	CO 1
14	Define FTP?	Remember	CO 1
15	Explain MIME?	Understand	CO 1
16	Illustrate the use of MIME Extension?	Understand	CO 1
17	Explain WWW?	Understand	CO 1
18	Define Lossy Compression and Lossless Compression?	Understand	CO 1
19	What are the applications of WWW	Understand	CO 1
20	Define domain name server.	Understand	CO 1

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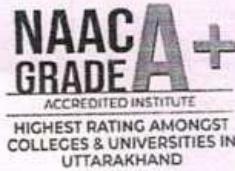
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Part - B (Long Answer Questions)			
1	What are the duties of FTP protocol?	Understand	CO 1
2	Define two methods of HTTP?	Understand	CO 1
3	Define Big-endian format and little-endian format with its performance?	Evaluate	CO5
4	Analyze the role of the local name server and the authoritative name server in DNS?	Analyze	CO 3
5	Define Domain Name Service (DNS) and explain in detail about	Remember	CO 1
6	Explain in detail about the working principles of Simple	Understand	CO 1
7	What is HTTP protocol used for? What is the default port number of HTTP protocol?	Understand	CO 1
8	Describe in detail about the World Wide Web (WWW)?	Remember	CO 1
9	Analyze the working principle of FTP in detail with neat diagram.	Analyze	CO 5
10	Explain the WWW in detail?	Understand	CO 1
11	Differentiate between ARP and RARP?	Understand	CO 1
12	Explain the specific purposes of the DNS, HTTP application layer protocols?	Understand	CO 1
13	Compare and contrast client/server with peer-to-peer data.	Apply	CO 4
14	Compare and contrast client/server with peer-to-peer data transfer over networks.	Understand	CO 1
15	Differentiate between ARP and RARP.	Understand	CO 1
16	Define two methods of HTTP with its performance.	Analyze	CO 3
17	Evaluate the role of the local name server and the authoritative name server in DNS.	Evaluate	CO 5
Part - C (Analytical Questions)			
1	Determine which of the following an FQDN is and which is a PQDN? a) Mil b) Edu c) xxx.yyy.net d) zzz.yyy.xxx.edu	Apply	CO 4
2	Discuss the TCP connection needed in the FTP?	Evaluate	CO 5
3	Interpret the following sequences of characters (In Hexadecimals) received by a TELNET client or server? a. FFFB01 b. FFFE01 c. FFF4 d. FFF9	Analyze	CO 3
4	Show the sequence of bits sent from a client TELNET for the binary transmission of 11110011 00111100 11111111	Apply	CO 4

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14. Assignment cum Tutorial sheet with solution

Course Name: Computer Networks

Course Code: BCST-502

Assignment Plan			Assignment Delivered	
S.No.	Planned Date	Assignment cum Tutorial No.	Actual Date	Assignment Type
1.	27-Aug-2022	A1	31/Aug/22	O2
2.	12-Sept-2022	A2	15/Sept/22	O2
3.	30-Sept-2022	A3	4/Oct/22	O2
4.	10-Oct-2022	A4	14/Oct/22	O2
5.	7-Nov-2022	A5	15/Nov/22	O2
Total Assignments:		Planned: 05	Delivered:	

Assignment Types:

1. Conceptual Writing Assignment
2. Explain a problem
3. How stuff works
4. Real-World Examples
5. Designing a Problem
6. Open-ended Design

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(Signature of HOD with date & seal)

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Dilip Saini
Director
Tula's Institute, Dehradun

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Assignment cum Tutorial: 01

Given Date: 27/08/2022

Marks: 5 CO: 1

Submission Date:

Question No.	Questions	Level
1	What are the different types of connections available?	2
2	What metrics are used to assess the performance of a network?	2
3	What is difference b/w Hub & Repeater?	2
4	Differentiate network layer delivery and transport layer delivery	3

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Assignment cum Tutorial: 02

Given Date: 12/09/2022

Marks: 5 CO: 3

Submission Date:

Question No.	Questions	Level
1	Compare Byte oriented and Bit oriented protocol. Explain with example.	2
2	Write about One bit sliding window Protocol.	3
3	Suppose that the sender wants to send 4 frames each of 8 bits, where the frames are 11001100, 10101010, 11110000 and 11000011. how to apply checksum method.	3
4	Apply CRC Data word to be sent- 100100 Key- 1101 [or generated polynomial $X^3 + X^2 + 1$] Check (No error in transmission or error in transmission)	3

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Assignment cum Tutorial: 03

Given Date: 30/09/2022

Marks: 5

CO: 1, CO3

Submission Date:

Question No.	Questions	Level
1	Define vulnerable period? How it affects the performance in MAC.	Understand
2	Explain how throughput is improved in slotted ALOHA over pure	Understand
3	Differentiate between 802.3, 802.4 and 802.5 IEEE standard.	Understand
4	Explain types of Ethernet.	Understand

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Assignment cum Tutorial: 04

Given Date: 10/10/2022

Marks: 5

CO: 2, CO4

Submission Date:

Question No.	Questions	Level
1	Demonstrate cryptography? Explain the different techniques uses in cryptography.	3
2	Explain the Window management? How it is controlling the flow of packets between two networks?	2
3	Point out the major roll of transport layer in OSI model? Explain the design issues when we design the transport layer and presentation layers.	4
4	Differentiate TCP and UDP in transport layers.	4
5	Differentiate network layer delivery and transport layer delivery.	4

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Assignment cum Tutorial: 05

Marks: 5 CO: 5

Given Date: 07/11/2022

Submission Date:

Question No.	Questions	Level
1	Explain how security is provided in interact operations in detail.	2
2	Explain the type of encryption/decryption method.	2
3	Write about application layer? Discuss the Concept of Network Virtual Terminal and MIME.	3
4	Explain User Agent and Mail Transfer Agent.	2
5	Differentiate between Lossy and lossless data compression. With a Block diagram, explain different steps of JPEG algorithm.	4

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Solution of Assignment

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15. Class Test

Course Name: Computer Networks

Course Code: BCST-502

Planned Date: 31/07/22

Class Test:01

Actual Date: 31/08/22
 Maximum Marks: 10

Question No.	Questions	Level	CO
1	What are the primary components of a computer network ?	4	1
2	Identify three error control techniques commonly employed in the Data Link Layer.	2	2

Planned Date:

Class Test:02

Actual Date: 14/09/22
 Maximum Marks: 10

Question No.	Questions	Level	CO
1	How does the Binary Exponential Back-off (BEB) algorithm work to resolve collisions in Ethernet networks?	2	3
2	Discuss in detail about the design challenges in ad-hoc and sensor network. Elaborately explain different steps involved in five phase reservation protocol with its frame format.	2	4

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- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission:

- To Promote intellectual and skilled human capital generation employment and entrepreneurship.
- To Be educational centre of excellence of multi ethnicity and diversity.
- To Establish as technology driven teaching learning institution.
- To Provide world class platform for research and innovation.
- To Inculcate social, environmental, heritage values.



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Class Test:03

Planned Date:

Actual Date: 29/09/22
Maximum Marks: 10

Question No.	Questions	Level	CO
1	How does the Binary Exponential Back-off (BEB) algorithm work to resolve collisions in Ethernet networks?	2	3
2	Discuss in detail about the design challenges in ad-hoc and sensor network. Elaborately explain different steps involved in five phase reservation protocol with its frame format.	2	4

Class Test:04

Planned Date:

Actual Date: 31/10/22
Maximum Marks: 10

Question No.	Questions	Level	CO
1	Explain the concept of protocol hierarchy in layered network architecture.	2	1
2	Compare and contrast the Go-Back-N and Selective Repeat protocols in the context of error control.	2	2

Class Test:05

Planned Date:

Actual Date: 31/11/22
Maximum Marks: 10

Question No.	Questions	Level	CO
1	How do you implement a new supported protocol in a real wireless card?	2	5
2	Examine the distributed assignment of network wide unique MAC address for WSN.	5	5

Signature of Faculty

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Tula's Institute, Dehradun

Department of Computer Sciences & Engineering
Tula's Institute, Dehradun

Signature of HOD

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Tula's Institute
1st Continuous Internal Evaluation
Odd Semester (October-2022)

Subject Name with Code: Computer Network (BCST-502)

Program/Branch/Year: B.Tech/CSE/I^{ll}rd

Maximum Marks: 30

Time Duration: 90mts

Q No.1 Attempt all. (1 X 6 =6)

- a. Physical or logical arrangement of network is (CO1)(L1)
a) Topology b) Routing c) Networking d) Control
- b. The physical layer is concerned with (CO1) (L1)
a) bit-by-bit delivery b) process to process delivery c) application to application delivery d) port to port delivery
- c. Which of the following tasks is not done by data link layer? (CO1)(L1)
a) framing b) error control c) flow control d) channel coding
- d. Header of a frame generally contains (CO2) (L1)
a) synchronization bytes b) addresses c) frame identifier d) all of the mentioned
- e. Which of the following is the multiple access protocol for channel access control? (CO2)(L1)
a) CSMA/CD b) CSMA/CA c) Both CSMA/CD & CSMA/CA d) HDLC
- f. The required resources for communication between end systems are reserved for the duration of the session between end systems in method. (CO2)(L1)
a) Packet switching b) Circuit switching c) Line switching d) Frequency switching

Q No.2 Attempt any three.(4 X 3 =12)

- a. How can compare circuit switching, packet switching and Message switching?
(CO1)(L2)
- b. Write a short note on:
a. ISDN
b. Twisted Pair media
(CO1)(L2)
- c. Differentiate between Pure Aloha and Slotted Aloha protocol. (CO1)(L3)
- d. Distinguish the OSI and TCP/IP Reference Models. (CO1)(L3)

Q No.3 Attempt any three. (4 X 3 =12)

- a. Compare between 802.3, 802.4 and 802.5 IEEE standard. (CO2)(L2)
- b. Differentiate between Byte stuffing and Bit stuffing with the help of example.
(CO2)(L2)
- c. Why collision is an issue in a random access protocol but not in controlled access or channelizing protocols?
(CO2)(L2)
- d. How collision detection takes place in CSMA/CD? (CO2)(L2)

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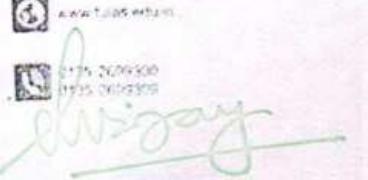
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Model Question Paper Solution

1st Continuous Internal Evaluation Odd Semester (October 2022)

Subject Name with Code: Computer Network (BCST-502)

Program/Branch/Year: B.Tech/CSE/IIrd

Maximum Marks: 30

Time Duration: 90mts

Q No.1 Attempt all. (1 X 6 =6)

a. Physical or logical arrangement of network is (CO1)(L1)

- a) Topology b) Routing c) Networking d) Control

Ans: a) Topology

b. The physical layer is concerned with (CO1) (L1)

- a) bit-by-bit delivery b) process to process delivery c) application to application delivery d) port to port delivery

Ans: a) bit-by-bit delivery

c. Which of the following tasks is not done by data link layer? (CO1)(L1)

- a) framing b) error control c) flow control d) channel coding

Ans: d) channel coding

d. Header of a frame generally contains (CO2) (L1)

- a) synchronization bytes b) addresses c) frame identifier d) all of the mentioned

Ans: b) addresses

e. Which of the following is the multiple access protocol for channel access control? (CO2)(L1)

- a) CSMA/CD b) CSMA/CA c) Both CSMA/CD & CSMA/CA d) HDLC

ans: c) Both CSMA/CD & CSMA/CA

f. The required resources for communication between end systems are reserved for the duration of the session between end systems in method. (CO2)(L1)

- a) Packet switching b) Circuit switching c) Line switching d) Frequency switching

Ans: b) Circuit switching

Q No.2 Attempt any three.(4 X 3 =12)

a. How can compare circuit switching, packet switching and Message switching?

(CO1)(L2)

Ans: The main difference between Circuit switching and Message switching is that Circuit Switching is done by setting a physical path between two systems while Message switching works on the **Store and Forward** method.

(CO1)(L2)

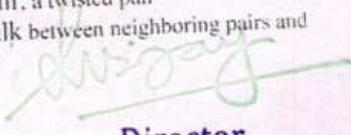
b. Write a short note on:

a. ISDN

Ans: These are a set of communication standards for simultaneous digital transmission of voice, video, data, and other network services over the traditional circuits of the public switched telephone network. Before Integrated Services Digital Network (ISDN), the telephone system was seen as a way to transmit voice, with some special services available for data. The main feature of ISDN is that it can integrate speech and data on the same lines, which were not available in the classic telephone system.

b. Twisted Pair media

Ans: Twisted pair cabling is a type of wiring used for communications in which two conductors of a single circuit are twisted together for the purposes of improving electromagnetic compatibility. Compared to a single conductor or an untwisted balanced pair, a twisted pair reduces electromagnetic radiation from the pair and crosstalk between neighboring pairs and improves rejection of external electromagnetic interference


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c. Differentiate between Pure Aloha and Slotted Aloha protocol. (CO1)(L3)

Ans:

Key	Pure Aloha	Slotted Aloha
Time Slot	In Pure Aloha, any station can transmit data at any time.	In Slotted Aloha, any station can transmit data only at the beginning of a time slot.
Time	In Pure Aloha, time is continuous and is not globally synchronized.	In Slotted Aloha, time is discrete and is globally synchronized.
Vulnerable time	The vulnerable time or susceptible time in Pure Aloha is equal to $(2 \times T_t)$.	In Slotted Aloha, the vulnerable time is equal to (T_t) .
Probability	The probability of successful transmission of a data packet $S = G \times e^{-2G} = e^{-2G}$	The probability of successful transmission of data packet $S = G \times e^{-G} = e^{-G}$
Maximum efficiency	Maximum efficiency = 18.4%.	Maximum efficiency = 36.8%.
Number of collisions	Does not reduce the number of collisions.	Slotted Aloha reduces the number of collisions to half, thus doubles the efficiency.

d. Distinguish the OSI and TCP/IP Reference Models. (CO1)(L3)

Ans: TCP/IP Model is a communication protocols suite using which network devices can be connected to the Internet. On the other hand, the OSI Model is a conceptual framework using which the functioning of a network can be described.

Q No.3 Attempt any three.

(4 X 3 = 12)

a. Compare between 802.3, 802.4 and 802.5 IEEE standard.

(CO2)(L2)

Ans:

Size of the frame format in IEEE 802.3 standard is 1572 bytes.

Size of the frame format in IEEE 802.4 standard is 8202 bytes.

Frame format in IEEE 802.5 standard is of the variable size.

b. Differentiate between Byte stuffing and Bit stuffing with the help of example. (CO2)(L2)

Ans: Byte stuffing is a mechanism to convert a message formed of a sequence of bytes that may contain reserved values such as frame delimiter, into another byte sequence that does not contain the reserved values.

Bit stuffing is the mechanism of inserting one or more non-information bits into a message to be transmitted, to break up the message sequence, for synchronization purpose

c. Why collision is an issue in a random access protocol but not in controlled access or channelizing protocols? (CO2)(L2)

Ans: In controlled access network, a device waits until it has explicit permission to transmit, for example, being in possession of a "token." In a random access network, a device assumes it can transmit if it detects no signal on the medium. If multiple independent devices decide to transmit "at the same time" (that is, within the window of time where they would have been able to detect one another), their messages will interfere with each other, or "collide." Since multiple devices cannot independently decide to transmit in a controlled access network, there can never be a collision.

d. How collision detection takes place in CSMA/CD?

(CO2)(L2)

Ans: When a CSMA/CD station senses that a collision has occurred, it immediately stops transmitting its packets and sends a brief jamming signal to notify all stations of this collision. Collisions are detected by monitoring the analog waveform directly from the channel.

Dwijay
Director
Tula's Institute, Dehradun



**CO Attainment of 1st Internal Assessment
 CN (BCST-502) (2022-23) ODD Sem**

SNo.	Roll No.	NAME	CO1	CO2	T1
1	200120101001	Aarush	9	7	16
2	200120101002	Abhay Sahu	7	10	17
3	200120101003	Abhijeet Kumar	10	4	14
4	200120101004	Abhishek Pal	11	15	26
5	200120101005	Abhishek Raj	10	6	16
6	200120101006	Abhishek Raj Singh	5	12	17
7	200120101007	Abhishek Rawat	9	13	22
8	200120101008	Abhishek Saraswat	8	15	23
9	200120101009	Aditya Choudhary	6	15	21
10	200120101010	Aditya Kumar	6	11	17
11	200120101011	Aditya Kumar	5	12	17
12	200120101012	Akash Giri	13	15	28
13	200120101013	Akash Patwal	7	15	22
14	200120101014	Amaan Ansari	6	13	19
15	200120101015	Aman Ishwar	7	10	17
16	200120101016	Aman Kumar Malaiya	10	10	20
17	200120101017	Amit Bhardwaj	8	8	16
18	200120101018	Anjali Prasad	11	15	26
19	200120101019	Ankit Jha	9	8	17
20	200120101020	Ankit Kumar	7	15	22
21	200120101021	Ankit Kumar	9	8	17
22	200120101022	Ankit Kumar Rai	6	8	14
23	200120101023	Ankit Rawat	11	15	26
24	200120101024	Anurag Raj	5	12	17
25	200120101025	Anushka	8	12	20
26	200120101026	Anushka Raj Kashyap	15	15	30
27	200120101027	Arpan Bharti	5	11	16
28	200120101028	Arpit Goyal	6	11	17

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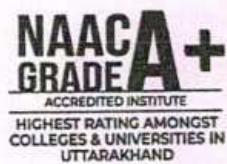
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29	200120101029	Arpit Kumar	8	9	17
30	200120101030	Arvind Singharpuria	5	10	15
31	200120101031	Aryan Raj	9	7	16
32	200120101032	Atul Kumar	15	15	30
33	200120101033	Avinash Kumar Jha	8	9	17
34	200120101034	Avnish Singh	8	9	17
35	200120101035	Awadesh	6	14	20
36	200120101036	Awanish Pratap Singh	9	8	17
37	200120101037	Ayush Dubey	5	8	13
38	200120101038	Ayush Shyamla	6	11	17
39	200120101039	Bikash Kumar	7	15	22
40	200120101040	Bikash Sah	8	8	16
41	200120101041	Binit Kumar Karn	10	7	17
42	200120101042	Binod Joshi	6	11	17
43	200120101043	Bishal Kumar Yadav	9	8	17
44	200120101044	Dheeraj Singh	10	7	17
45	200120101045	Dhirendra Singh	7	9	16
46	200120101046	Gautam Kumar Yadav	9	8	17
47	200120101047	Gourav Bohra	11	15	26
48	200120101048	Harsh Kashiwal	10	10	20
49	200120101049	Harsh Raj	5	11	16
50	200120101050	Harsh Upadhyay	7	9	16
51	200120101051	Harshit Kumar	8	10	18
52	200120101052	Himanshu Ranjan	8	9	17
53	200120101053	Imran Ahmed	10	14	24
54	200120101054	Jai Dhiman	7	10	17
55	200120101055	Kartikey Singh Senger	10	7	17
56	200120101056	Love Pratap	6	11	17
57	200120101057	Manas Negi	6	11	17
58	200120101058	Manav	9	8	17

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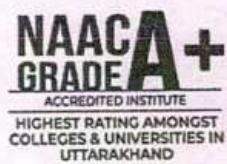
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59	200120101059	Manikant Kumar	10	5	15
60	200120101060	Manish Kumar	10	6	16
61	200120101061	Mansi Ray	9	7	16
62	200120101062	Mohammad Aarif	10	7	17
63	200120101063	Mohammed Afroz Ansari	5	15	20
64	200120101064	Nitesh Kumar	8	6	14

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18. Result Analysis of CIE I

Slow /Average / Advance Learner Identification (Sessional 1)

S. No	University Roll No.	Student Name	CIE- 1	Assessment (10)	Sessional out of 50	Assessment out of 50	Total (100)	Slow or Average or Advance
1	200120101001	Aarush	16	5	27	25	52	Slow Learner
2	200120101002	Abhay Sahu	17	7	28	35	63	Average Learner
3	200120101003	Abhijeet Kumar	14	8	23	40	63	Average Learner
4	200120101004	Abhishek Pal	26	10	43	50	93	Advance Learner
5	200120101005	Abhishek Raj	16	10	27	50	77	Slow Learner
6	200120101006	Abhishek Raj Singh	17	5	28	25	53	Advance Learner
7	200120101007	Abhishek Rawat	22	10	37	50	87	Advance Learner
8	200120101008	Abhishek Saraswat	23	10	38	50	88	Advance Learner
9	200120101009	Aditya Choudhary	21	10	35	50	85	Slow Learner
10	200120101010	Aditya Kumar	17	5	28	25	53	Advance Learner
11	200120101011	Aditya Kumar	17	7	28	35	63	Slow Learner
12	200120101012	Akash Giri	28	10	47	50	97	Advance Learner
13	200120101013	Akash Patwal	22	10	37	50	87	Slow Learner
14	200120101014	Amaan Ansari	19	6	32	30	62	Advance Learner
15	200120101015	Aman Ishwar	17	6	28	30	58	Advance Learner

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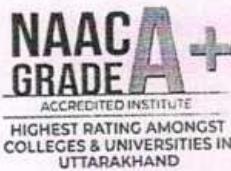
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Roll No.	Student ID	Name	20	10	33	50	83	Advance Learner
16	200120101016	Aman Kumar	20	10	33	50	83	Advance Learner
17	200120101017	Amit Bhardwaj	16	6	27	30	57	Slow Learner
18	200120101018	Anjali Prasad	26	10	43	50	93	Advance Learner
19	200120101019	Ankit Jha	17	10	28	50	78	Advance Learner
20	200120101020	Ankit Kumar	22	10	37	50	87	Advance Learner
21	200120101021	Ankit Kumar	17	10	28	50	78	Advance Learner
22	200120101022	Ankit Kumar Rai	14	7	23	35	58	Slow Learner
23	200120101023	Ankit Rawat	26	10	43	50	93	Advance Learner
24	200120101024	Anurag Raj	17	10	28	50	78	Advance Learner
25	200120101025	Anushka	20	7	33	35	68	Average Learner
26	200120101026	Anushka Raj	30	10	50	50	100	Advance Learner
27	200120101027	Arpan Bharti	16	5	27	25	52	Slow Learner
28	200120101028	Arpit Goyal	17	10	28	50	78	Advance Learner
29	200120101029	Arpit Kumar	17	10	28	50	78	Advance Learner
30	200120101030	Arvind Singharpur	15	9	25	45	70	Average Learner
31	200120101031	Aryan Raj	16	5	27	25	52	Slow Learner
32	200120101032	Atul Kumar	30	10	50	50	100	Advance Learner
33	200120101033	Avinash Kumar Jha	17	5	28	25	53	Slow Learner
34	200120101034	Avnish Singh	17	5	28	25	53	Slow Learner
35	200120101035	Awadesh	20	6	33	30	63	Average Learner

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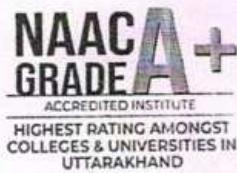


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			17	10	28	50	78	Advance Learner
36	200120101036	Awanish Pratap	17	10	28	50	78	Slow Learner
37	200120101037	Ayush Dubey	13	5	22	25	47	Slow Learner
38	200120101038	Ayush Shyamla	17	5	28	25	53	Slow Learner
39	200120101039	Bikash Kumar	22	7	37	35	72	Average Learner
40	200120101040	Bikash Sah	16	6	27	30	57	Slow Learner
41	200120101041	Binit Kumar	17	5	28	25	53	Slow Learner
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45	200120101045	Dhirendra Singh	16	5	27	25	52	Slow Learner
46	200120101046	Gautam Kumar	17	5	28	25	53	Slow Learner
47	200120101047	Gourav Bohra	26	10	43	50	93	Advance Learner
48	200120101048	Harsh Kashiwal	20	9	33	45	78	Advance Learner
49	200120101049	Harsh Raj	16	9	27	45	72	Average Learner
50	200120101050	Harsh Upadhyay	16	5	27	25	52	Slow Learner
51	200120101051	Harshit Kumar	18	10	30	50	80	Advance Learner
52	200120101052	Himanshu Ranjan	17	5	28	25	53	Slow Learner
53	200120101053	Imran Ahmed	24	6	40	30	70	Average Learner
54	200120101054	Jai Dhiman	17	8	28	40	68	Average Learner
55	200120101055	Kartikey Singh	17	7	28	35	63	Average Learner

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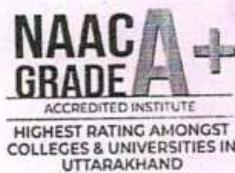
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			17	10	28	50	78	Advance Learner
56	200120101056	Love Pratap	17	10	28	50	78	Slow Learner
57	200120101057	Manas Negi	17	5	28	25	53	Average Learner
58	200120101058	Manav	17	7	28	35	63	Average Learner
59	200120101059	Manikant Kumar	15	9	25	45	70	Slow Learner
60	200120101060	Manish Kumar	16	4	27	20	47	Slow Learner
61	200120101061	Mansi Ray	16	5	27	25	52	Slow Learner
62	200120101062	Mohammad Aarif	17	5	28	25	53	Slow Learner
63	200120101063	Mohammed Afroz	20	9	33	45	78	Advance Learner
64	200120101064	Nitesh Kumar	14	6	23	30	53	Slow Learner

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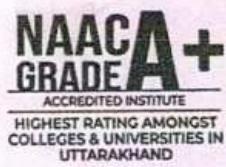


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19. Advance and slow learner identification

Slow Learner

S. N o	University Roll No.	Student Name	CIE - 1	Assessment (10)	Sessional out of 50	Assessment out of 50	Total (100)	Slow or Average or Advance
1	200120101001	Aarush	16	5	27	25	52	Slow Learner
2	200120101006	Abhishek Raj Singh	17	5	28	25	53	Slow Learner
3	200120101010	Aditya Kumar	17	5	28	25	53	Slow Learner
4	200120101015	Aman Ishwar	17	6	28	30	58	Slow Learner
5	200120101017	Amit Bhardwaj	16	6	27	30	57	Slow Learner
6	200120101022	Ankit Kumar Rai	14	7	23	35	58	Slow Learner
7	200120101027	Arpan Bharti	16	5	27	25	52	Slow Learner
8	200120101031	Aryan Raj	16	5	27	25	52	Slow Learner
9	200120101033	Avinash Kumar Jha	17	5	28	25	53	Slow Learner
10	200120101034	Avnish Singh	17	5	28	25	53	Slow Learner
11	200120101037	Ayush Dubey	13	5	22	25	47	Slow Learner
12	200120101038	Ayush Shyamla	17	5	28	25	53	Slow Learner
13	200120101040	Bikash Sah	16	6	27	30	57	Slow Learner
14	200120101041	Binit Kumar	17	5	28	25	53	Slow Learner
15	200120101043	Bishal Kumar	17	5	28	25	53	Slow Learner
16	200120101044	Dheeraj Singh	17	6	28	30	58	Slow Learner
17	200120101045	Dhirendra Singh	16	5	27	25	52	Slow Learner
18	200120101046	Gautam Kumar	17	5	28	25	53	Slow Learner
19	200120101050	Harsh Upadhyay	16	5	27	25	52	Slow Learner

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20	200120101052	Himanshu Ranjan	17	5	28	25	53	Slow Learner
21	200120101057	Manas Negi	17	5	28	25	53	Slow Learner
22	200120101060	Manish Kumar	16	4	27	20	47	Slow Learner
23	200120101061	Mansi Ray	16	5	27	25	52	Slow Learner
24	200120101062	Mohammad Aarif	17	5	28	25	53	Slow Learner
25	200120101064	Nitesh Kumar	14	6	23	30	53	Slow Learner

Divyanshu
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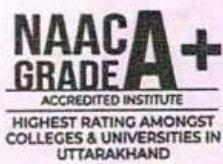


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Advance Learner

S. No	University Roll No.	Student Name	CIE- 1	Assessment (10)	Sessional out of 50	Assessment out of 50	Total (100)	Slow or Average or Advance
1	200120101004	Abhishek Pal	26	10	43	50	93	Advance Learner
2	200120101005	Abhishek Raj	16	10	27	50	77	Advance Learner
3	200120101007	Abhishek Rawat	22	10	37	50	87	Advance Learner
4	200120101008	Abhishek Saraswat	23	10	38	50	88	Advance Learner
5	200120101009	Aditya Choudhary	21	10	35	50	85	Advance Learner
6	200120101012	Akash Giri	28	10	47	50	97	Advance Learner
7	200120101013	Akash Patwal	22	10	37	50	87	Advance Learner
8	200120101016	Aman Kumar	20	10	33	50	83	Advance Learner
9	200120101018	Anjali Prasad	26	10	43	50	93	Advance Learner
10	200120101019	Ankit Jha	17	10	28	50	78	Advance Learner
11	200120101020	Ankit Kumar	22	10	37	50	87	Advance Learner
12	200120101021	Ankit Kumar	17	10	28	50	78	Advance Learner
13	200120101023	Ankit Rawat	26	10	43	50	93	Advance Learner
14	200120101024	Anurag Raj	17	10	28	50	78	Advance Learner
15	200120101026	Anushka Raj	30	10	50	50	100	Advance Learner
16	200120101028	Arpit Goyal	17	10	28	50	78	Advance Learner
17	200120101029	Arpit Kumar	17	10	28	50	78	Advance Learner
18	200120101032	Atul Kumar	30	10	50	50	100	Advance Learner
19	200120101036	Awanish Pratap	17	10	28	50	78	Advance Learner
20	200120101042	BINOD JOSHI	17	10	28	50	78	Advance Learner
21	200120101047	Gourav Bohra	26	10	43	50	93	Advance Learner

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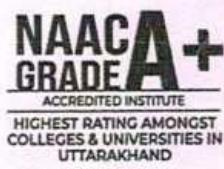
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22	200120101048	Harsh Kashiwal	20	9	33	45	78	Advance Learner
23	200120101051	Harshit Kumar	18	10	30	50	80	Advance Learner
24	200120101056	Love Pratap	17	10	28	50	78	Advance Learner
25	200120101063	Mohammed Afroz	20	9	33	45	78	Advance Learner

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Date: 5/10/2022

NOTICE

All students of B.TECH CSE-3rd year are hereby informed that the department has decided to schedule "Remedial Classes" for Slow Learner category students which will help them provide additional support and assistance tailored to your learning needs.

Your participation in these classes is highly encouraged as they are intended to assist you in reaching your full potential.

These classes will be conducted on according to the below schedule. Your presence is compulsory for these classes.

Time/Date	I 9:40 AM-10:30 AM	II 10:30 AM-11:20 AM	III 11:30 AM-12:20 PM	IV 12:20 PM-01:10 PM
08/10/2022	BCST 501	BCST 502	BCST 503	BCST 504
15/10/2022	BCST 501	BCST 502	BCST 503	BCST 504
22/10/2022	BCST 501	BCST 502	BCST 503	BCST 504
5/11/2022	BCST 501	BCST 502	BCST 503	BCST 504


Faculty Coordinator


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Remedial classes for Slow Learner

S.No.	Roll No.	NAME	06/10/2022	07/10/2022	10/10/2022	12/10/2022
1.	200120101001	Aarush	P	P	P	P
2.	200120101006	Abhishek Raj Singh	P	P	P	P
3.	200120101010	Aditya Kumar	A	P	P	P
4.	200120101015	Aman Ishwar	P	P	P	P
5.	200120101017	Amit Bhardwaj	P	P	P	P
6.	200120101022	Ankit Kumar Rai	P	P	A	P
7.	200120101027	Arpan Bharti	P	P	P	A
8.	200120101031	Aryan Raj	P	P	P	P
9.	200120101033	Avinash Kumar Jha	P	P	P	P
10.	200120101034	Avnish Singh	P	P	P	P
11.	200120101037	Ayush Dubey	P	P	P	P
12.	200120101038	Ayush Shyamla	P	P	A	P
13.	200120101040	Bikash Sah	P	P	P	P
14.	200120101041	Binit Kumar	P	P	P	P
15.	200120101043	Bishal Kumar	A	P	P	P
16.	200120101044	Dheeraj Singh	P	A	P	P
17.	200120101045	Dhirendra Singh	P	P	P	P
18.	200120101046	Gautam Kumar	P	P	P	P
19.	200120101050	Harsh Upadhyay	P	P	P	P
20.	200120101052	Himanshu Ranjan	P	P	P	P
21.	200120101057	Manas Negi	P	P	P	P
22.	200120101060	Manish Kumar	P	P	P	P
23.	200120101061	Mansi Ray	P	P	P	P
24.	200120101062	Mohammad Aarif	P	P	P	P
25.	200120101064	Nitesh Kumar	P	P	P	P

Total No of Students Present (Column wise)- 23

24

23

24

Total No of Students Absent (Column wise)-- 02

01

02

01

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**Model Question Paper Solution
2nd Continuous Internal Evaluation
Odd Semester (December-2022)**

handshake synchronizes both ends of a network by enabling both sides to agree upon original sequence numbers.

Part C: Attempt all.

(4 X 3 =12)

a) Explain leaky bucket and token bucket algorithm. (CO6) (L2)

Ans: The following is an algorithm for variable-length packets:

1. Initialize a counter to n at the tick of the clock.
2. Repeat until n is smaller than the packet size of the packet at the head of the queue.
 1. Pop a packet out of the head of the queue, say P.
 2. Send the packet P, into the network
 3. Decrement the counter by the size of packet P.
3. Reset the counter and go to step 1.

b) Explain the Link State routing algorithm with an example. (CO6) (L2)

Ans: Link state routing is a method in which each router shares its neighbourhood's knowledge with every other router in the internetwork. In this algorithm, each router in the network understands the network topology then makes a routing table depend on this topology.

c) Differentiate the working principles of Data Encryption Standard and Advanced Encryption Standard (CO5) (L2)

- **Ans:** The main difference between DES and AES is that in DES, the block is split into two halves before being processed further, but in AES, the entire block is processed to get ciphertext.
- DES has a key size of 56 bits, which is less than AES, which has a secret key size of 128, 192, or 256
- AES is comparatively faster than DES.
- The smaller key size of DES makes it less secure than AES.
- The Feistel Cipher principle is used in the DES algorithm, while the *substitution* and *permutation* principle are used in the AES

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Tula's Institute
2nd Continuous Internal Evaluation
Odd Semester (December-2022)

Subject Name with Code: CN (BCST-502)
Program/Branch/Year: B.Tech/CSE/III

Time Duration: 90mts
Maximum Marks: 30

Part A: Attempt all.(1 X 6 =6)

a). The TTL field has value 10. How many routers (max) can process this datagram?

- (CO3)(L1)
- 1) 11 2) 5 3) 10 4) 1

b). The..... layer of OSI model can use the trailer of the frame for error detection.
(CO3)(L1)

- 1) Physical 2) Data link 3) Transport 4) Presentation

c). Address use 14 bits for Network the and 16 bits for the host portion of the IP address.
(CO6) (L1)

1. Class A 2. Class B 3. Class C 4. Class D

d). State the following statement is true or false. (CO6)(L1)

i) In class B addresses a Total of more than 1 billion addresses can be formed.

ii) Class E addresses are reserved for future or experimental use

1. True, False 2. True, True 3. False, True 4. False, False

e). Which layers of the OSI determines the interface often system with the user?

(CO4)(L1)

1. Application Layer 2. Session Layer 3. Transport Layer 4. Network layer

f). Which of the transport layer protocols is connectionless? (CO5)(L1)

- 1) UDP 2) TCP 3) FTP 4) NVT

Shreyas
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Tula's Institute, Dehradun

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Tula's Institute, Dehradun

**Model Question Paper Solution
2nd Continuous Internal Evaluation
Odd Semester (December-2022)**

Subject Name with Code: CN (BCST-502)
Program/Branch/Year: B.Tech/CSE/III

Time Duration: 90mts
Maximum Marks: 30

Part A: Attempt all.(1 X 6 =6)

- a). The TTL field has value 10. How many routers (max) can process this datagram? (CO3)(L1)

a) 11 b) 5 c) 10 d) 1

Ans:- c) 10

- b). The..... layer of OSI model can use the trailer of the frame for error detection.
(CO3)(L1)

1) Physical 2) Data link 3) Transport 4) Presentation

Ans: 2) Data link

- c). Address use 14 bits for Network the and 16 bits for the host portion of the IP address. (CO6) (L2)

1. Class A 2. Class B 3. Class C 4. Class D

Ans: 2. Class B

- d). State the following statement is true or false. (CO6)(L1)

 - i) In class B addresses a Total of more than 1 billion addresses can be formed.
 - ii) Class E addresses are reserved for future or experimental use

Ans: 2. True, True

c) Which layers of the OSI determines the interface often system with the user? (CO4)(L1)

- ④ Which layer? ① Application layer ② Transport Layer ③ Network layer ④ Network interface layer

Ans: 1. Application Layer

- f). which of the transport layer protocols is connectionless? (CO5)(L1)

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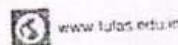
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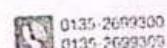
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**Model Question Paper Solution
2nd Continuous Internal Evaluation
Odd Semester (December-2022)**

Part B: Attempt Any Three.

(4 X 3 =12)

a) **Describe the IPv6 data grams?**

(CO6) (L2)

Ans: IPv6 datagram is a packet composed of the base header (40 bytes) and payload (up to 65,536 bytes) Payload has extension header (optional) and data packet .

Version	Priority	Flow Label		
		Payload Length	Next Header	Hop Limit
Source IP Address				
Destination IP Address				

b) **Describe Intra domain routing protocol with example?**

(CO6) (L2)

Ans: Interdomain Routing is the protocol in which the routing algorithm works both within and between domains. Domains must be connected in some way, for hosts inside one domain to exchange data with hosts in other domains. This connection within domains is governed by the interdomain routing protocols. This is often done using the Border Gateway Protocol (BGP). It is used in Path Vector Routing using which interdomain routing is performed. In path vector routing, the routing depends on the analysis of the path from the nodes in the current domain to the node in the other domain, and not on the distance between nodes.

c) **Explain UDP & TCP Header format?**

(CO4) (L2)

Ans: Both TCP and UDP use headers as part of packaging the message data for transfer over network connections. Because TCP is the more robust of the two protocols, its header is larger at 20 bytes with an option for additional data, while UDP headers are limited to 8 bytes in size.

1. Each TCP header has 10 required fields totaling 20 bytes (160 bits) in size. It can optionally include an additional data field up to 40 bytes in size.

2. A UDP header contains 8 bytes, divided into the following four required fields:

- Source UDP port number (2 bytes):
- Destination UDP port number (2 bytes)
- Length of data (2 bytes)
- UDP checksum (2 bytes).

d) **Explain the TCP connection establishment and termination.**

(CO5) (L2)

TCP hosts must establish a connection-oriented session with one another. Connection establishment is performed by using the three-way handshake mechanism. A three-way

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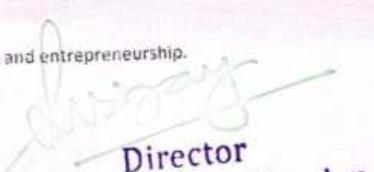
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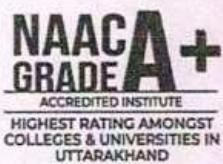
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Slow /Average / Advance Learner Identification (Sessional 2)

S. No	University Roll No.	Student Name	CIE-II	Assessment (10)	Sessional out of 50	Assignment out of 50	Total (100)	Slow or Average or Advance
1	200120101001	Aarush	14	8	23	40	63	Average Learner
2	200120101002	Abhay Sahu	13	7	22	35	57	Slow Learner
3	200120101003	Abhijeet Kumar	14	8	23	40	63	Average Learner
4	200120101004	Abhishek Pal	30	10	50	50	100	Advance Learner
5	200120101005	Abhishek Raj	14	10	23	50	73	Average Learner
6	200120101006	Abhishek Raj Singh	29	8	48	40	88	Advance Learner
7	200120101007	Abhishek Rawat	28	10	47	50	97	Advance Learner
8	200120101008	Abhishek Saraswat	23	10	38	50	88	Advance Learner
9	200120101009	Aditya Choudhary	27	10	45	50	95	Advance Learner
10	200120101010	Aditya Kumar	13	9	22	45	67	Average Learner
11	200120101011	Aditya Kumar	15	10	25	50	75	Advance Learner
12	200120101012	Akash Giri	30	10	50	50	100	Advance Learner
13	200120101013	Akash Patwal	26	10	43	50	93	Advance Learner
14	200120101014	Amaan Ansari	27	7	45	35	80	Advance Learner
15	200120101015	Aman Ishwar	11	9	18	45	63	Average Learner
16	200120101016	Aman Kumar	30	10	50	50	100	Advance Learner
17	200120101017	Amit Bhardwaj	12	9	20	45	65	Average Learner
18	200120101018	Anjali Prasad	30	10	50	50	100	Advance Learner
19	200120101019	Ankit Jha	15	10	25	50	75	Advance Learner

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Roll No.	Student ID	Name	30	10	50	50	100	Performance Level
20	200120101020	Ankit Kumar	30	10	50	50	100	Advance Learner
21	200120101021	Ankit Kumar	17	10	28	50	78	Advance Learner
22	200120101022	Ankit Kumar Rai	14	9	23	45	68	Average Learner
23	200120101023	Ankit Rawat	28	10	47	50	97	Advance Learner
24	200120101024	Anurag Raj	17	10	28	50	78	Advance Learner
25	200120101025	Anushka	22	8	37	40	77	Advance Learner
26	200120101026	Anushka Raj	30	10	50	50	100	Advance Learner
27	200120101027	Arpan Bharti	10	10	17	50	67	Average Learner
28	200120101028	Arpit Goyal	17	10	28	50	78	Advance Learner
29	200120101029	Arpit Kumar	17	10	28	50	78	Advance Learner
30	200120101030	Arvind Singharpur	15	10	25	50	75	Advance Learner
31	200120101031	Aryan Raj	16	8	27	40	67	Average Learner
32	200120101032	Atul Kumar	30	10	50	50	100	Advance Learner
33	200120101033	Avinash Kumar Jha	13	8	22	40	62	Average Learner
34	200120101034	Avnish Singh	9	9	15	45	60	Advance Learner
35	200120101035	Awadesh	26	8	43	40	83	Advance Learner
36	200120101036	Awanish Pratap	17	10	28	50	78	Average Learner
37	200120101037	Ayush Dubey	13	8	22	40	62	Average Learner
38	200120101038	Ayush Shyamla	17	8	28	40	68	Advance Learner
39	200120101039	Bikash Kumar	24	7	40	35	75	Average Learner
40	200120101040	Bikash Sah	14	9	23	45	68	Advance Learner
41	200120101041	Binit Kumar	29	8	48	40	88	Advance Learner
42	200120101042	BINOD JOSHI	17	10	28	50	78	Advance Learner

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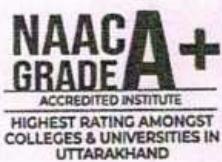
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									Average Learner
43	200120101043	Bishal Kumar	17	7	28	35	63		Average Learner
44	200120101044	Dheeraj Singh	13	9	22	45	67		Average Learner
45	200120101045	Dhirendra Singh	14	9	23	45	68		Average Learner
46	200120101046	Gautam Kumar	13	9	22	45	67		Average Learner
47	200120101047	Gourav Bohra	30	10	50	50	100		Advance Learner
48	200120101048	Harsh Kashiwal	26	9	43	45	88		Advance Learner
49	200120101049	Harsh Raj	12	9	20	45	65		Average Learner
50	200120101050	Harsh Upadhyay	16	8	27	40	67		Advance Learner
51	200120101051	Harshit Kumar	22	10	37	50	87		Average Learner
52	200120101052	Himanshu Ranjan	13	8	22	40	62		Advance Learner
53	200120101053	Imran Ahmed	24	8	40	40	80		Average Learner
54	200120101054	Jai Dhiman	17	10	28	50	78		Average Learner
55	200120101055	Kartikey Singh	15	9	25	45	70		Advance Learner
56	200120101056	Love Pratap	17	10	28	50	78		Average Learner
57	200120101057	Manas Negi	13	10	22	50	72		Advance Learner
58	200120101058	Manav	15	10	25	50	75		Advance Learner
59	200120101059	Manikant Kumar	15	10	25	50	75		Advance Learner
60	200120101060	Manish Kumar	16	4	27	20	47	Slow Learner	Average Learner
61	200120101061	Mansi Ray	16	8	27	40	67		Average Learner
62	200120101062	Mohammad Aarif	17	8	28	40	68		Advance Learner
63	200120101063	Mohammed Afroz	22	9	37	45	82		Average Learner
64	200120101064	Nitesh Kumar	14	9	23	45	68		Average Learner

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**CO Attainment of 2nd Internal Assessment
 CN (BCST-502) (2022-23) ODD Sem**

SNo.	Roll No.	NAME	CO3	CO4	CO5	T1
1	200120101001	Aarush	6	4	4	14
2	200120101002	Abhay Sahu	6	4	3	13
3	200120101003	Abhijeet Kumar	5	5	4	14
4	200120101004	Abhishek Pal	10	10	10	30
5	200120101005	Abhishek Raj	7	4	3	14
6	200120101006	Abhishek Raj Singh	10	9	10	29
7	200120101007	Abhishek Rawat	10	8	10	28
8	200120101008	Abhishek Saraswat	9	5	9	23
9	200120101009	Aditya Choudhary	10	7	10	27
10	200120101010	Aditya Kumar	5	4	4	13
11	200120101011	Aditya Kumar	10	3	2	15
12	200120101012	Aakash Giri	10	10	10	30
13	200120101013	Aakash Patwal	10	8	8	26
14	200120101014	Amaan Ansari	10	7	10	27
15	200120101015	Aman Ishwar	7	3	1	11
16	200120101016	Aman Kumar Malaiya	10	10	10	30
17	200120101017	Amit Bhardwaj	7	2	3	12
18	200120101018	Anjali Prasad	10	10	10	30
19	200120101019	Ankit Jha	8	4	3	15
20	200120101020	Ankit Kumar	10	10	10	30
21	200120101021	Ankit Kumar	6	5	6	17
22	200120101022	Ankit Kumar Rai	9	3	2	14
23	200120101023	Ankit Rawat	10	8	10	28
24	200120101024	Anurag Raj	9	4	4	17
25	200120101025	Anushka	10	4	8	22
26	200120101026	Anushka Raj Kashyap	10	10	10	30
27	200120101027	Arpan Bharti	5	3	2	10
28	200120101028	Arpit Goyal	9	4	4	17

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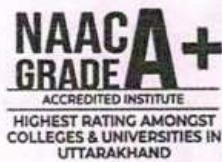
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29	200120101029	Arpit Kumar	7	7	3	17
30	200120101030	Arvind Singharpuria	5	5	5	15
31	200120101031	Aryan Raj	5	6	5	16
32	200120101032	Atul Kumar	10	10	10	30
33	200120101033	Avinash Kumar Jha	8	2	3	13
34	200120101034	Avnish Singh	5	3	1	9
35	200120101035	Awadesh	10	6	10	26
36	200120101036	Awanish Pratap Singh	10	4	3	17
37	200120101037	Ayush Dubey	7	3	3	13
38	200120101038	Ayush Shyamla	7	4	6	17
39	200120101039	Bikash Kumar	10	7	7	24
40	200120101040	Bikash Sah	6	4	4	14
41	200120101041	Binit Kumar Karn	10	9	10	29
42	200120101042	Binod Joshi	8	4	5	17
43	200120101043	Bishal Kumar Yadav	5	8	4	17
44	200120101044	Dheeraj Singh	5	4	4	13
45	200120101045	Dhirendra Singh	8	3	3	14
46	200120101046	Gautam Kumar Yadav	9	4	0	13
47	200120101047	Gourav Bohra	10	10	10	30
48	200120101048	Harsh Kashiwal	10	7	9	26
49	200120101049	Harsh Raj	5	4	3	12
50	200120101050	Harsh Upadhyay	8	4	4	16
51	200120101051	Harshit Kumar	10	6	6	22
52	200120101052	Himanshu Ranjan	9	1	3	13
53	200120101053	Imran Ahmed	10	4	10	24
54	200120101054	Jai Dhiman	7	5	5	17
55	200120101055	Kartikey Singh Senger	9	4	2	15
56	200120101056	Love Pratap	7	4	6	17
57	200120101057	Manas Negi	6	4	3	13
58	200120101058	Manav	10	4	1	15

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59	200120101059	Manikant Kumar	10	3	2	15
60	200120101060	Manish Kumar	8	4	4	16
61	200120101061	Mansi Ray	8	5	3	16
62	200120101062	Mohammad Aarif	7	6	4	17
63	200120101063	Mohammed Afroz Ansari	10	4	8	22
64	200120101064	Nitesh Kumar	7	4	3	14

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Impact of Extra class on Slow Learner (Sessional 2)

S.No.	University Roll No.	Student Name	CIE- II	Assessment(10)	Sessional out of 50	Assignment out of 50	Total (100)	Slow or Average or Advance
1	200120101011	Aditya Kumar	15	10	25	50	75	Advance Learner
2	200120101014	Amaan Ansari	27	7	45	35	80	Advance Learner
3	200120101025	Anushka	22	8	37	40	77	Advance Learner
4	200120101030	Arvind Singharpur	15	10	25	50	75	Advance Learner
5	200120101035	Awadesh	26	8	43	40	83	Advance Learner
6	200120101039	Bikash Kumar	24	7	40	35	75	Advance Learner
7	200120101053	Imran Ahmed	24	8	40	40	80	Advance Learner
8	200120101054	Jai Dhiman	17	10	28	50	78	Advance Learner
9	200120101058	Manav	15	10	25	50	75	Advance Learner

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20.COO ATTAINMENT

COURSE NAME		PROGRAM		Computer Networks										
COURSE CODE	BCST-502	YEAR	B.Tech											
BRANCH	CSE	3rd												
SEMESTER		5th												
S.N	ROLL No.	STUDENT'S NAME	SE-I	SE-II	Avg of SE I and SE II	SCT	SCT1	SCT2	SCT3	SCT4	SCT5	SES	SEE	CO Attended Y/N
			CO-1	CO-2	CO-03	CO-04	CO-05	CO-06	CO-07	CO-08	CO-09	CO-10	CO-11	CO Attended Y/N
			15	15	30	10	10	30	2	2	2	2	2	CO Attended Y/N
1	180120101042	MANOJ KUMAR	8	9	17	7	3	1	11	14	2	1	2	Y
2	200120101001	AARUSH	9	7	16	6	4	4	14	15	1	1	1	N
3	200120101002	ABHAY SAHU	7	10	17	6	4	3	13	15	2	1	2	Y
4	200120101003	ABHIJEET KUMAR	10	4	14	5	5	4	14	14	2	1	2	N
5	200120101004	ABHISHEK PAL	11	15	26	10	10	30	28	2	2	10	2	Y
6	200120101005	ABHISHEK RAJ	10	6	16	7	4	3	14	15	2	2	2	Y
7	200120101006	ABHISHEK RAJ SIN	5	12	17	10	9	10	29	23	1	1	1	Y
8	200120101007	ABHISHEK RAWAT	9	13	22	10	8	10	28	25	2	2	10	Y
9	200120101008	ABHISHEK SARASH	8	15	23	9	5	9	23	2	2	10	2	Y
10	200120101009	ADITYA CHOURDHAR	6	15	21	10	7	10	27	24	2	2	10	Y
11	200120101010	ADITYA KUMAR	6	11	17	5	4	4	13	15	1	1	1	Y
12	200120101011	ADITYA KUMAR	5	12	17	10	3	2	15	16	2	1	2	Y
13	200120101012	AKASH GIRI	13	15	28	10	10	30	29	2	2	10	2	Y
14	200120101013	AKASH PATWAL	7	15	22	10	8	8	26	24	2	2	10	Y
15	200120101014	AMAAN ANSARI	6	13	19	10	7	10	27	23	1	1	1	Y
16	200120101015	AMAN ISHWAR	7	10	17	7	3	1	11	14	1	1	2	Y
17	200120101016	AMAN KUMAR MAL	10	10	20	10	10	30	25	2	2	10	2	Y
18	200120101017	AMIT BHARDWAJ	8	8	16	7	2	3	12	14	1	1	2	Y
19	200120101018	ANJALI PRASAD	11	15	26	10	10	30	28	2	2	10	2	Y

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20	200120101019	ANKIT JHA	9	8	17	8	4	3	15	16	2	2	10	2	2	10	2	2	10	36	Y	Y	Y	N	30			
21	200120101020	ANKIT KUMAR	7	15	22	10	10	30	26	2	2	2	10	2	2	2	2	2	2	10	46	Y	Y	Y	Y	57		
22	200120101021	ANKIT KUMAR	9	8	17	6	5	6	17	17	2	2	2	10	2	2	2	2	2	10	37	Y	Y	Y	Y	78		
23	200120101022	ANKIT KUMAR RAI	6	8	14	9	3	2	14	14	2	1	1	2	7	2	2	2	2	10	31	N	Y	N	N	57		
24	200120101023	ANKIT RAWAT	11	15	26	10	8	10	28	27	2	2	2	10	2	2	2	2	2	10	47	Y	Y	Y	Y	71		
25	200120101024	ANURAG RAI	5	12	17	9	4	4	17	17	2	2	2	10	2	2	2	2	2	10	37	N	Y	Y	Y	37		
26	200120101025	ANUSHKA	8	12	20	10	4	8	22	21	2	1	1	2	7	2	2	2	2	10	38	Y	Y	N	Y	65		
27	200120101026	ANUSHKA RAJKAS	15	15	30	10	10	30	30	2	2	2	10	2	2	2	2	2	2	10	50	Y	Y	Y	Y	63		
28	200120101027	ARPAN BHARTI	5	11	16	5	3	2	10	13	1	1	1	1	5	2	1	1	1	2	7	25	N	Y	N	N	67	
29	200120101028	ARPIT GOYAL	6	11	17	9	4	4	17	17	2	2	2	10	2	2	2	2	2	10	37	N	Y	Y	Y	71		
30	200120101029	ARPIT KUMAR	8	9	17	7	3	17	17	2	2	2	10	2	2	2	2	2	2	10	37	Y	Y	Y	N	53		
31	200120101030	ARVIND SINGHARP	5	10	15	5	5	5	15	15	2	2	1	2	9	2	2	2	2	10	34	N	Y	Y	Y	64		
32	200120101031	ARYAN RAJ	9	7	16	5	6	5	16	16	1	1	1	1	5	2	2	1	2	9	30	Y	N	Y	Y	43		
33	200120101032	ATUL KUMAR	15	15	30	10	10	30	30	2	2	2	10	2	2	2	2	2	2	10	50	Y	Y	Y	Y	76		
34	200120101033	AVINASH KUMAR JH	8	9	17	8	2	3	13	15	1	1	1	1	5	2	2	2	2	2	10	30	Y	Y	Y	N	68	
35	200120101034	AVNISH SINGH	8	9	17	5	3	1	9	13	1	1	1	1	5	2	1	1	1	2	7	25	Y	Y	N	N	46	
36	200120101035	AWADESH	6	14	20	10	6	10	26	23	1	1	1	1	2	6	2	2	2	2	10	39	N	Y	Y	Y	73	
37	200120101036	AWANISH PRATAP S	9	8	17	10	4	3	17	17	2	2	2	10	2	2	2	2	2	10	37	Y	Y	Y	N	64		
38	200120101037	AYUSH DUBEY	5	8	13	7	3	3	13	13	1	1	1	1	5	2	1	1	1	2	7	25	N	Y	N	N	58	
39	200120101038	AYUSH SHYAMLA	6	11	17	7	4	6	17	17	1	1	1	1	5	2	1	1	1	2	8	30	N	Y	N	Y	0	
40	200120101039	BIKASH KUMAR	7	15	22	10	7	7	24	23	2	1	1	1	2	7	2	2	2	2	10	40	Y	Y	Y	Y	59	
41	200120101040	BIKASH SAH	8	8	16	6	4	4	14	15	1	1	1	1	2	6	2	1	1	1	2	7	28	Y	N	Y	Y	58
42	200120101041	BINIT KUMAR KARN	10	7	17	10	9	10	29	23	1	1	1	1	5	2	2	2	2	2	10	38	Y	N	Y	Y	55	
43	200120101042	BINOD JOSHI	6	11	17	8	4	5	17	17	2	2	2	10	2	2	2	2	2	10	37	N	Y	Y	Y	58		
44	200120101043	BISHAL KUMAR YAN	9	8	17	6	8	4	17	17	1	1	1	1	5	2	2	1	2	9	31	Y	Y	Y	N	53		
45	200120101044	DHEERAJ SINGH	10	7	17	5	4	4	13	15	1	1	1	1	2	6	2	2	2	2	10	31	Y	N	Y	N	24	
46	200120101045	DHIRENDRA SINGH	7	9	16	8	3	3	14	15	1	1	1	1	5	2	2	2	2	2	10	30	N	Y	N	N	52	
47	200120101046	GAUTAM KUMAR YA	9	8	17	9	4	0	13	15	1	1	1	1	5	2	2	2	2	2	10	30	Y	Y	Y	N	40	
48	200120101047	GOURAV BOHRA	11	15	26	10	10	30	28	2	2	2	10	2	2	2	2	2	2	10	48	Y	Y	Y	Y	66		
49	200120101048	HARSH KASHIWAL	10	10	20	10	7	9	26	23	2	2	2	1	2	9	2	2	2	2	10	42	Y	Y	Y	Y	57	
50	200120101049	HARSH RAJ	5	11	16	5	4	3	12	14	2	2	2	1	2	9	2	2	2	2	10	33	N	Y	N	Y	55	
51	200120101050	HARSH UPADHYAY	7	9	16	8	4	4	16	16	1	1	1	1	5	2	2	1	2	9	30	N	Y	N	INC	Y		
52	200120101051	HARSHIT KUMAR	8	10	18	10	6	6	22	20	2	2	2	2	10	2	2	2	2	2	10	40	Y	Y	Y	Y	44	

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53	200120101052	HIMANSHU RANJAN	8	9	17	9	1	3	13	15	1	1	1	5	2	2	2	2	2	2	10	30	Y	Y	Y	N	N	34	
54	200120101053	IMRAN AHMED	10	14	24	10	4	10	24	24	1	1	1	2	6	2	2	2	2	2	2	10	40	Y	Y	Y	N	Y	46
55	200120101054	JAI DHIMAN	7	10	17	7	5	5	17	2	1	1	2	8	2	2	2	2	2	2	10	35	Y	Y	Y	Y	Y	48	
56	200120101055	KARTIKEY SINGH S	10	7	17	9	4	2	15	16	2	1	1	2	7	2	2	2	2	2	2	10	33	Y	N	Y	N	N	41
57	200120101056	LOVE PRATAP	6	11	17	7	4	6	17	17	2	2	2	10	2	2	2	2	2	2	10	37	N	Y	Y	Y	Y	42	
58	200120101057	MANAS NEGI	6	11	17	6	4	3	13	15	1	1	1	5	2	2	2	2	2	2	10	30	N	Y	Y	N	N	65	
59	200120101058	MANAV	9	8	17	10	4	1	15	16	2	1	1	2	7	2	2	2	2	2	2	10	33	Y	Y	Y	N	N	70
60	200120101059	MANIKANT KUMAR	10	5	15	10	3	2	15	15	2	2	1	2	9	2	2	2	2	2	2	10	34	Y	N	Y	N	N	66
61	200120101060	MANISH KUMAR	10	6	16	8	4	4	16	16	1	1	1	0	4	2	2	2	2	2	2	10	30	Y	N	Y	N	N	AB
62	200120101061	MANSI RAY	9	7	16	8	5	3	16	16	1	1	1	1	5	2	2	2	2	2	2	10	31	Y	N	Y	Y	N	33
63	200120101062	MOHAMMAD AARIF	10	7	17	7	6	4	17	17	1	1	1	1	1	2	2	1	1	1	2	8	30	Y	N	Y	Y	N	30
64	200120101063	MUHAMMED AFROZ	5	15	20	10	4	8	22	21	2	2	1	2	9	2	2	2	2	2	2	10	40	N	Y	Y	N	Y	66
65	200120101064	NITESH KUMAR	8	6	14	7	4	3	14	14	1	1	1	1	2	6	2	2	2	2	2	10	30	Y	N	Y	N	N	36
66	200120101065	PALLAVI PRITI	7	15	22	10	10	30	26	2	2	2	10	2	2	2	2	2	2	2	2	10	46	Y	Y	Y	Y	Y	60
67	200120101066	PARAS NEGI	9	7	16	8	3	3	14	15	1	1	1	1	5	2	2	2	2	2	2	10	30	Y	N	Y	N	N	22
68	200120101067	PAWAN KUMAR SIN	7	8	15	7	4	2	13	14	1	1	1	2	6	1	1	1	1	1	1	5	25	N	N	Y	N	N	16
69	200120101068	PRABHAT KAINTHO	6	14	20	10	10	30	25	2	2	2	10	2	2	2	2	2	2	2	2	10	45	N	Y	Y	Y	Y	67
70	200120101069	PRANAV KUMAR CH	8	12	20	10	10	30	25	2	1	1	1	2	7	2	2	2	2	2	2	10	42	Y	Y	Y	Y	Y	57
71	200120101070	PRATEEK MISHRA	9	7	16	6	1	3	10	13	1	1	1	0	4	2	1	1	1	1	2	8	25	Y	N	Y	N	N	43
72	200120101071	PRATIK KUMAR OJI	7	9	16	6	7	3	16	16	2	2	1	2	9	2	2	2	2	2	2	10	35	Y	Y	Y	N	N	38
73	200120101072	PRATYUSH RAJ	10	4	14	5	6	3	14	14	1	1	1	0	4	2	1	1	1	1	2	7	25	Y	N	Y	N	N	37
74	200120101073	PRINCE RAJ	10	7	17	6	4	3	13	15	2	1	1	2	7	2	2	2	2	2	2	10	32	Y	N	Y	N	N	31
75	200120101074	PRIYANSHI RAWAT	9	8	17	8	4	3	15	16	1	1	1	0	4	2	2	2	2	2	2	10	30	Y	Y	Y	N	N	47
76	200120101075	PRIYANSHU DEEP	8	9	17	6	4	7	17	17	1	1	1	5	2	2	2	2	2	2	2	10	32	Y	Y	Y	N	Y	36
77	200120101076	PULKIT MOHAN	9	7	16	9	4	3	16	16	2	2	2	10	2	2	2	2	2	2	2	10	36	Y	Y	Y	Y	Y	48
78	200120101078	RAHUL YADAV	9	7	16	9	4	3	16	16	1	1	1	2	6	2	2	2	2	2	2	10	32	Y	N	Y	N	N	54
79	200120101079	RAJAT SINGH RAW	8	9	17	6	4	3	13	15	2	2	1	2	9	2	2	2	2	2	2	10	34	Y	Y	Y	N	N	31
80	200120101080	RANJEET SAH TELB	10	15	25	10	5	10	25	25	1	1	1	2	6	2	1	1	1	1	2	7	38	Y	Y	Y	N	Y	48
81	200120101081	RAUNAK KUMAR	9	6	15	6	4	3	13	14	2	2	1	2	9	2	2	2	2	2	2	10	33	Y	N	Y	N	N	33
82	200120101082	RITESH CHANDRA V	6	8	14	5	4	3	12	13	1	1	1	2	6	1	1	1	1	1	2	6	25	N	N	N	N	N	34
83	200120101083	IRITIKA SINGH	5	11	16	8	3	3	14	15	1	1	1	5	2	2	2	2	2	2	2	10	30	N	Y	Y	N	N	56
84	200120101084	ROHIT BISHT	10	6	16	7	4	3	14	15	2	1	1	2	7	2	2	2	2	2	2	10	32	Y	N	Y	N	N	51
85	200120101085	RUDRAKSH AGGAR	8	9	17	10	4	3	17	17	2	2	2	2	2	2	2	2	2	2	2	10	37	Y	Y	Y	N	Y	48



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86	200120101086	SANGEET SINGH RJ	9	5	14	7	3	2	12	13	1	1	0	4	2	1	1	2	1	2	8	25	Y	N	Y	N	48
87	200120101087	SARTHAK RANA	5	12	17	6	6	5	17	2	2	2	2	10	2	2	2	2	2	2	10	37	N	Y	Y	Y	48
88	200120101088	SAURABH KUMAR	6	8	14	10	4	0	14	14	1	1	1	0	4	2	1	1	1	2	7	25	N	N	Y	N	16
89	200120101089	SAURABH YADAV	10	10	20	10	10	30	25	1	1	1	1	5	2	2	2	1	2	9	39	Y	Y	Y	Y	63	
90	200120101090	SHANA PARVEEN	9	10	19	10	7	10	27	23	2	2	2	10	2	2	2	2	2	10	43	Y	Y	Y	Y	64	
91	200120101091	SHANTANU CHAUHAN	5	12	17	9	5	3	17	17	2	1	1	2	7	2	2	2	2	10	34	N	Y	Y	Y	56	
92	200120101092	SHIVAM CHAUHAN	8	9	17	8	5	4	17	17	1	1	1	2	6	2	1	1	1	2	7	30	Y	Y	Y	Y	53
93	200120101094	SHIVAM SAINI	9	12	21	10	5	10	25	23	2	2	2	10	2	2	2	2	2	10	43	Y	Y	Y	Y	42	
94	200120101095	SHIVAM SHUKLA	10	11	21	10	7	10	27	24	2	1	1	2	7	2	2	2	2	10	41	Y	Y	Y	Y	51	
95	200120101096	SHIVAM SINGH	8	12	20	10	10	30	25	2	2	2	10	2	2	2	2	2	2	10	45	Y	Y	Y	Y	63	
96	200120101097	SHIVANI KUMARI	9	11	20	10	10	30	25	2	2	2	10	2	2	2	2	2	2	10	45	Y	Y	Y	Y	62	
97	200120101098	SNEH SHISH TIWAR	6	13	19	10	7	10	27	23	2	2	2	10	2	2	2	2	2	10	43	N	Y	Y	Y	46	
98	200120101099	SNEHA JOSHI	5	10	15	9	2	2	13	14	1	1	1	2	6	2	2	2	2	2	10	30	N	Y	Y	N	24
99	200120101100	SNEHA SHARMA	8	12	20	10	10	30	25	2	2	2	1	2	9	2	2	2	2	2	10	44	Y	Y	Y	Y	41
100	200120101101	SONAL RAJ	8	7	15	8	4	3	15	15	1	1	1	1	5	1	1	1	1	1	5	25	N	N	Y	N	23
101	200120101102	SUMESH MAKHJIA	8	14	22	10	8	10	28	25	2	2	2	10	2	2	2	2	2	10	45	Y	Y	Y	Y	55	
102	200120101103	SUMIT RANA	5	14	19	10	9	10	29	24	2	2	2	10	2	2	2	2	2	10	44	N	Y	Y	Y	57	
103	200120101104	SURAJ KUMAR	8	15	23	8	7	10	25	24	2	2	1	2	8	2	2	2	2	10	42	Y	Y	Y	Y	51	
104	200120101105	SURAJ SINGH PUJA	5	12	17	7	4	4	15	16	1	1	1	1	5	2	2	2	2	10	31	N	Y	Y	N	0	
105	200120101106	SWEETY KUMARI	10	6	16	7	5	4	16	16	1	1	1	1	5	2	2	2	1	2	9	30	Y	N	Y	N	54
106	200120101107	UJJWAL SINGH	9	6	15	5	5	5	15	15	2	2	2	10	2	2	2	2	2	10	35	Y	N	Y	Y	33	
107	200120101108	VAISHNAVI	10	9	19	7	6	8	21	20	2	1	1	2	8	2	2	2	2	10	38	Y	Y	Y	Y	48	
108	200120101109	VIKASH SINGH	6	8	14	6	5	3	14	14	1	1	1	0	4	2	1	1	1	2	7	25	N	N	Y	N	31
109	200120101110	VINAYAK DHAR	6	10	16	6	2	2	10	13	1	1	1	0	4	2	1	1	2	8	25	N	Y	Y	N	40	
110	200120101111	VINAYAK NARAYAN SINGH	6	8	14	9	2	3	14	14	1	1	1	0	4	2	1	1	1	2	7	25	N	N	Y	N	15
111	200120101112	VIRAT SINGH	9	7	16	6	4	2	12	14	2	1	1	2	7	2	2	2	2	10	31	Y	N	Y	N	39	
112	200120101113	VIRENDRA KUMAR YADAV	5	11	16	8	3	1	12	14	1	1	1	2	6	2	2	2	2	10	30	N	Y	Y	N	39	
113	200120101114	VISHAKH DHAR	5	12	17	8	4	5	17	17	1	1	1	2	6	2	1	1	1	2	7	30	N	Y	Y	N	31
114	200120101115	YASH SAH	9	13	22	7	8	9	24	23	2	1	1	2	7	2	2	2	2	10	40	Y	Y	Y	Y	56	
115	200120101116	PARAM NAUTIYAL	10	13	23	9	4	10	23	23	2	2	2	10	2	2	2	2	2	10	43	Y	Y	Y	Y	48	
116	710120101001	ABDUL NAIF KHAN	9	8	17	6	6	5	17	17	1	1	1	2	6	2	2	2	2	10	33	Y	Y	Y	Y	39	

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Sample Lab

Course File



COURSE RECORD

Academic Year 2022-23(ODD)

Faculty Name:	Dr. Sandeep Kumar
Course Title:	Computer Network Lab (BCSP-502)
Semester:	V-A
Department:	Computer Science & Engineering

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Mission:

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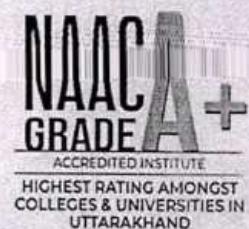


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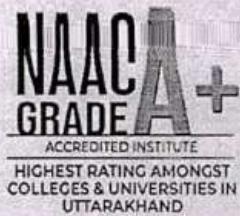


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1. Institute Vision & Mission

Institute Vision

To emerge as an academic centre by creating and developing world-class professionals promoting innovation and research.

Institute Mission

IM-01: To Promote intellectual and skilled human capital generating employment and entrepreneurship.

IM-01: To Be an educational centre of excellence of multi-ethnicity and diversity.

IM-01: To Establish a technology-driven teaching-learning institution.

IM-01: To Provide a world-class platform for research and innovation.

IM-01: To Inculcate social, environmental, and heritage values.

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2. Department Vision & Mission

Department Vision

To become the centre of excellence in teaching, research and innovative practices for computing.

Department Mission

DM 1: To provide a learning ambience to enhance programming skills for problem solving.

DM 2: To integrate the software industry and academia in order to utilise technology for research, innovation and entrepreneurship.

DM 3: To develop professionals with a solid foundation who can think outside the box to adapt green computing solution.

DM 4: To provide a comprehensive computing environment that meets the highest global standards for higher education and lifelong learning.

DM 5: To create ethical, skilled engineers through theoretical understanding and practical implementations.

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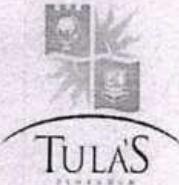
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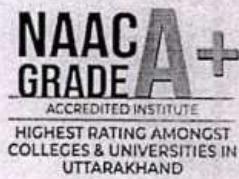


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3. Academic Calendar



*Approved by AICTE, Ministry of HRD, Govt. of India * 100% placement

Affiliated: Uttarakhand Technical University * Noida Sector 8 Institutional University * Uttarakhand Board for Technical Education

ACADEMIC CALENDAR

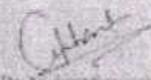
Odd Semester

Session : 2022-2023

S.No.	Particulars	Date	Responsibility
1.	Indication of Provisional class lists to teachers	14 August 2022	Concerned HoD
2.	Time Table Display on Notice Boards	16 August 2022	Concerned HoD
3.	Commencement of Classes 2 nd , 3 rd & 4 th Year	16 August 2022	Concerned HoD
4.	Convening of Classes - 1 st year (including orientation induction program)	05 September 2022	Concerned HoD
5.	Induction Orientation Ceremony	05-25 September 2022	Dr. Nidhi Goyal Dr. Neeraj Singh
6.	For VMSSU & UTTER 1 st , 2 nd , 3 rd , 4 th Year	10-12 October 2022	Exam committee
7.	For SDSU 2 nd , 3 rd , 4 th Year	To be decided as per the University Exam dates	Exam committee
8.	1 st CIE* (For all First year students)	09-12 November 2022	Exam committee
9.	Technical Festival - Utkarsh 2022*	25-26 November 2022	Event Committee
10.	2 nd CIE* (For all 2 nd , 3 rd , 4 th Year)	07-10 December 2022	Exam committee
11.	2 nd CIE* (For all First Years)	26-30 December 2022	Exam committee
12.	Theory Examinations* Collection of Admit Cards	To be announced later	Registrar/Exam committee

CIE = Continuous Internal Evaluation

*May be revised as per UTE/SDSU/UTTER schedule.


(Dr. Neeraj Singh)
Dear Academic




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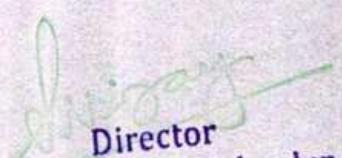
4. Program Educational Objectives (PEOs)

PEO-01: To provide the imperatives knowledge of science and engineering concepts fundamental for a computer professional, development, testing and networking.

PEO-02: To inculcate ability in creativity & design of computer support systems and impart knowledge to become a successful software developer.

PEO-03: To exhibit leadership capability, triggering social and economical commitment and inculcate community services.


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5. Program Outcomes (POs)

- PO-01: Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO-02: Problem Analysis:** Identify, formulate, research literature, and analyze complex Engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO-03: Design/development of Solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO-04: Conduct Investigations of Complex Problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO-05: Modern Tool usage:** Create, select, and apply appropriate techniques, resources, and Modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
- PO-06: The Engineer and Society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO-07: Environment and Sustainability:** Understand the impact of the professional Engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO-08: Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

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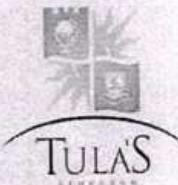
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- PO-09: Individual and Team Work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
- PO-10: Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
- PO-11: Project Management and Finance:** Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO-12: Life-long Learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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6. Program Specific Outcomes (PSOs)

PSO-01: Provide programming paradigms through teaching learning facilities.

PSO-02: Provide ability to design and develop computing solutions.

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7. Course Objectives, Course Outcomes

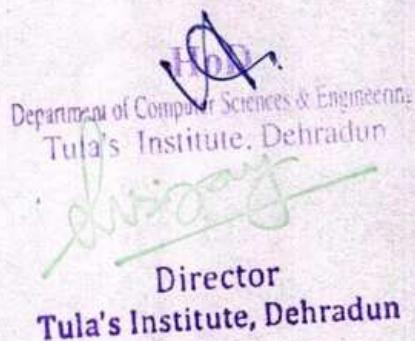
Course Objectives:

The objectives of this course are to

1. Equip the students with a general overview of the concepts and fundamentals of computer networks.
2. Familiarize the students with the standard models for the layered approach to communication between machines in a network and the protocols of the various layers.

Course Outcomes (CO):

1. Apply the knowledge of different network components, transmission mediums and tools to solve various problems of communication.
2. Analyze and configure protocols concerning various network technologies over different mediums and layers.
3. Design and develop different network design and logical models of networking to solve network related problems.
4. Utilize knowledge of modern network simulation tools to propose solution for efficient working of networks for real world problems.
5. Make use of various troubleshooting methods to overcome networking problems.



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8. CO-PO/PSO Mapping

SUBJECT:		Computer Networks Lab												SUBJECT CODE:BCSP-502											
CO PO AND CO-PSO MAPPING																									
CO #	BLOOM'S TAXONOMY LEVEL	PO2: Problem Identify, Formulate Knowledge-		PO3: Design & Soln.: Design, Apply		PO4: Conduct Investigation Interpret, Develop		PO5: Modern Tool Usage: Create, Select, Apply		PO6: The Engineering & Society: Sustainability		PO7: Environment & Ethics: Understand		PO9: Individual & Teamwork		PO10: Management & Communication		PO11: Project & Ethics		PO12: Life Long Learning		PSO-01: Program Design and Computing			
		B1L	C3	C4	C5	C5	C5	C3,C5,C6	A3	A2	A3	A3	A3	A3	A3	A3	A3	A2	C3	C5					
BCSP50 2.1	C3	3					-	1	-																1
BCSP50 2.2	C4	3	3	1				1																	2
BCSP50 2.3	C3	3		2				1																	1
BCSP50 2.4	C3,C5	3		2				2																	1
BCSP50 2.5	C3	3	1				-	-																	1
WT. AVG		3	2	1.6666667			1.25																		1.2
OVERALL MAPPING OF COURSE														2						1.48					

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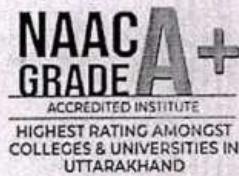
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9. List of Experiments with CO Mapping (AS PER UTU SYLLABUS)

S. No.	EXPERIMENTS	CO
1	Study of different types of Network cables and Practically implement the cross-wired cable and straight through cable using clamping tool.	1
2	Study of Network Devices in Detail.	2
3	Connect the computers in local area network	3
4	Configuring a network topology using packet tracer software	4
5	Implementation of the Data Link Layer framing method such as character stuffing.	5
6	Implementation of the Data Link Layer framing method such as bit stuffing.	5
7	Implementation of CRC algorithm.	5
8	Configuring a network Using distance vector Routing protocol	5
9	Configuring a network using link state routing protocol	5
10	Take a 64 bit playing text and encrypt the same using DES algorithm	4

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(EXPERIMENTS BEYOND CURRICULUM)

S.NO.	EXPERIMENTS	CO	Po
1	Set up a wireless network with access points. Configure security settings such as WPA/WPA2 encryption and MAC address filtering.	3	1,3,8
2	Configure QoS settings to prioritize certain types of traffic over others. Test the impact on network performance.	4	1,3,4
3	Analyze various network troubleshooting scenarios for students to diagnose and resolve, covering common issues such as connectivity problems, slow performance, and network outages.	5	2,4
4	Design a network topology for a given scenario considering factors like scalability, performance, security, and budget constraints. Implement the design in the lab environment and evaluate its effectiveness.	3	1,2,3

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10. Time-Table

Day/Period	I	II	III	IV	V	VI	VII	VIII
	9:40-10:30	10:30-11:20	11:30-12:20	12:20-01:10	01:10-02:00	02:00-02:50	02:50-03:40	03:40-04:30
MON	BCST-506(P)(A1) KG LAB-7		BCST-503(L) BKS H-403		BCSP-501(P)(A1) PJ LAB-7		BCST-501(L) PJ H-403	BCST-502(L) DSK H-403
	BCSP-502(P)(A2) DSK LAB-7				BCSP-503(P)(A2) BKS LAB-7			
TUE	BCST-506(P)(A2) KG LAB-7		BCST-504(L) GB H-403		BCSP-501(P)(A2) PJ LAB-7		BCST-501(L) PJ H-204	BCST-501(A1) PJ H-204
	BCSP-502(P)(A1) DSK Lab-7				BCSP-503(P)(A1) BKS LAB-7			
WED	BCST-503(L) BKS H-403	BCST-502(L) DSK H-403	BCST-504(L) GB H-403		BCST-502(T)(A2) DSK H-403	BOCS-505(L) MAK H-403	BCST-508 (A1+A2) MAK 403	BCST-502(L) DSK H-403
THU		Soft Skills	BCST-503(L) BKS H-403	BCST-504(L) GB H-403	BCST-504 (C)(T)(A1) GB H-204		BCST-501(L) PJ H-403	BCST-501(A2) PJ H-204
					BOCS-505(T)(A1) MAK H-403			
FRI	BCST-503(L) BKS H-403	BCST-502(L) DSK H-403	Aptitude and Reasoning		BCST-504 (C)(T)(A2) GB H-204		BCST-508 (A1+A2) MAK 403	BCST-503(T)(A1) BKS H-204
					BCST-501(L) PJ H-403	BOCS-505(L) MAK H-403		
SAT	BCST-503(L) BKS H-403	BCST-502(L) DSK H-403	BCST-504(L) GB H-403		BCST-501(L) PJ H-403	BOCS-505(L) MAK H-403		

S.No	Course Code	Name of Course	Faculty Member Code	Name of Faculty Member
1	BCST-501	Operating System	PJ	Dr. Pooja Joshi
2	BCST-502	Computer Networks	DSK	Dr. Sandeep Kumar
3	BCST-503	Design and Analysis of Algorithms	BKS	Mr. B. K Sharma
4	BCST-504 (C)	Internet and web Technology (Departmental Elective-I)	GB	Mr Girish Singh Bisht
5	BOCS-505 (C)	Cyber Security(Open Elective-I)	MAK	Mr. Anurag Kumar
6	BCSP-501	Operating System Lab	PJ	Dr. Pooja Joshi
7	BCSP-502	Computer Networks Lab	DSK	Dr. Sandeep Kumar
8	BCSP-503	Design and Analysis of Algorithms Lab	BKS	Mr. B. K Sharma
9	BCST-506	Virtual Lab(UNIX/LINUX/PYTHON/JAVA etc)	KG	Mr. Kuldeep Gusain
10	BCST-508	Internship-II	MAK	Mr. Anurag Kumar
11		C Programming Lab	KG	Mr. Kuldeep Gusain
12		Soft Skills		Ms. Yamini Goel
13		Aptitude and Reasoning		Mr. Sachin Arora

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11. List of Students

GROUP-A1

S.N.	Roll No.	Name of Student
1	200120101001	AARUSH
2	200120101002	ABHAY SAHU
3	200120101003	ABHIJEET KUMAR
4	200120101004	ABHISHEK PAL
5	200120101005	ABHISHEK RAJ
6	200120101006	ABHISHEK RAJ SINGH
7	200120101007	ABHISHEK RAWAT
8	200120101008	ABHISHEK SARASWAT
9	200120101009	ADITYA CHOUDHARY
10	200120101010	ADITYA KUMAR
11	200120101011	ADITYA KUMAR
12	200120101012	AKASH GIRI
13	200120101013	AKASH PATWAL
14	200120101014	AMAAAN ANSARI
15	200120101015	AMAN ISHWAR
16	200120101016	AMAN KUMAR MALAIYA
17	200120101017	AMIT BHARDWAJ
18	200120101018	ANJALI PRASAD
19	200120101019	ANKIT JHA
20	200120101020	ANKIT KUMAR
21	200120101021	ANKIT KUMAR
22	200120101022	ANKIT KUMAR RAI
23	200120101023	ANKIT RAWAT
24	200120101024	ANURAG RAJ
25	200120101025	ANUSHKA .
26	200120101026	ANUSHKARAJKASHYAP
27	200120101027	Arpan Bharti
28	200120101028	ARPIT GOYAL
29	200120101029	ARPIT KUMAR
30	200120101030	ARVINDSINGHPURIA
31	200120101031	ARYAN RAJ
32	200120101032	ATUL KUMAR

GROUP-A2

S.N.	ROLL NO.	NAME OF STUDENT
31	200120101033	AVINASH KUMAR JHA
32	200120101034	AVNISH SINGH
33	200120101035	AWADESH .
34	200120101036	AWANISHPRATAPSINGH
35	200120101037	AYUSH A DUBEY
36	200120101038	AYUSH SHYAMLA
37	200120101039	BIKASH KUMAR
38	200120101040	BIKASH SAH
39	200120101041	BINIT KUMAR KARN
40	200120101042	BINOD JOSHI
41	200120101043	BISHAL KUMAR YADAV
42	200120101044	DHEERAJ SINGH
43	200120101045	DHIRENDRA SINGH
44	200120101046	GAUTAM KUMAR YADAV
45	200120101047	GOURAV BOHRA
46	200120101048	HARSH KASHIWAL
47	200120101049	HARSH RAJ
48	200120101050	HARSH UPADHYAY
49	200120101051	HARSHIT KUMAR
50	200120101052	HIMANSHU RANJAN
51	200120101053	IMRAN AHMED
52	200120101054	JAI DHIMAN
53	200120101055	KARTIKEYSINGHSENGR
54	200120101056	LOVE PRATAP
55	200120101057	MANAS NEGI
56	200120101058	MANAV .
57	200120101059	MANIKANT KUMAR
58	200120101060	MANISH KUMAR
59	200120101061	MANSI RAY
60	200120101062	MD AARIF
61	200120101063	MOHD.AFROZANSARI
62	200120101064	NITESH KUMAR

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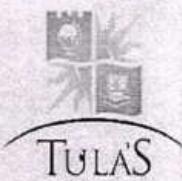


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12. Practical Plan

LABP LAN		Section with Group-A1	Lab Conducted
No	Date	Topic	Date
1.	22-08-2022	Study of different types of Network cables and Practically implement the cross-wired cable and straight through cable using clamping tool.	22-08-2022
2.	29-08-2022	Study of Network Devices in Detail.	29-08-2022
3.	05-09-2022	Connect the computers in local area network	05-09-22
4.	19-09-2022	Configuring a network topology using packet tracer software	26-09-22
5.	26-09-2022	Implementation of the Data Link Layer framing method such as character stuffing.	10-10-22
6.	10-10-2022	Implementation of the Data Link Layer framing method such as bit stuffing.	17-10-22
7.	17-10-2022	Implementation of CRC algorithm.	31-10-22
8.	31-10-2022	Configuring a network Using distance vector Routing protocol	07-10-22
9.	07-10-2022	Configuring a network using link state routing protocol	14-10-22
10.	14-10-2022	Take a 64 bit playing text and encrypt the same using DES algorithm	21-10-22
Planned:		Conducted:	

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LABP LAN		Section with Group-A2	Lab Conducted
No	Date	Topic	Date
1.	23-08-2022	Study of different types of Network cables and Practically implement the cross-wired cable and straight through cable using clamping tool.	23-08-22
2.	06-09-2022	Study of Network Devices in Detail.	13-09-22
3.	13-09-2022	Connect the computers in local area network	18-10-22
4.	18-10-2022	Configuring a network topology using packet tracer software	01-11-22
5.	01-11-2022	Implementation of the Data Link Layer framing method such as character stuffing.	08-11-22
6.	08-11-2022	Implementation of the Data Link Layer framing method such as bit stuffing.	15-11-22
7.	15-11-2022	Implementation of CRC algorithm.	22-11-22
8.	22-11-2022	Configuring a network Using distance vector Routing protocol	29-11-22
9.	29-11-2022	Configuring a network using link state routing protocol	4-12-22
10.	29-11-2022	Take a 64 bit playing text and encrypt the same using DES algorithm	9-12-22
Planned:			Conducted:

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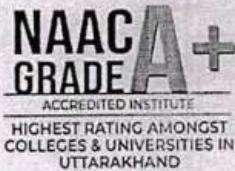
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LABP LAN		Beyond The Syllabus Plan for Group-A1&A2	Lab Conducted
No	Date	Topic	Date
1.	30-08-2022	Set up a wireless network with access points. Configure security settings such as WPA/WPA2 encryption and MAC address filtering.	30-08-22
2.	20-09-2022	Configure QoS settings to prioritize certain types of traffic over others. Test the impact on network performance.	20-09-22
3.	27-09-2022	Analyse various network troubleshooting scenarios for students to diagnose and resolve, covering common issues such as connectivity problems, slow performance, and network outages.	27-09-22
4.	11-10-2022	Design a network topology for a given scenario considering factors like scalability, performance, security, and budget constraints. Implement the design in the lab environment and evaluate its effectiveness.	11-10-22

Planned:

Conducted:

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13. Rubrics for Continuous Assessments in the Laboratory

- Student's performance is periodically evaluated based on their completion of observations, lab record book, and viva voce before the University End Semester Examination.
- Continuous evaluation of student performance is done for every experiment in the laboratory.
- The laboratories are evaluated as per the following criteria:
 - The Continuous Evaluation is done by the faculty in every lab session for *10 marks per practical* based on rubrics defined in **Table 13(i)**
 - The average marks of all sessions will be considered for awarding final internal assessment marks.

• **Table 13(i): Rubrics used for Continuous Evaluation in every lab session**

Parameter	Allocated Marks	Low	Medium	High
Execution (In Practical-IP)	03	The given program was not code/debug/execute in the lab session	The given program was coded & debugged but not executed in the lab session	The given program was coded, debugged and executed in the lab session
		(0 marks)	(1 - 2 marks)	(3 marks)
Viva Voce (In Viva-IV)	03	The student did not answer any viva questions asked	The student answered a few viva questions asked	The student answered all viva questions asked
		(0 marks)	(1 - 2 marks)	(3 marks)
Record Writing (In Record -IR)	04	The record was not submitted in the lab session.	The record was submitted in the lab session but was incomplete (Wrong Program/Experiment)	Completed record was submitted in the lab session
		(0 marks)	(1 - 3 marks)	(4 marks)

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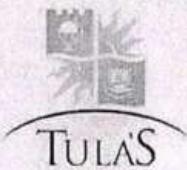
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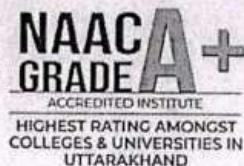
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Continuous Assessments in the Laboratory

Name of Faculty: Dr. Sandeep Kumar

Course with code: Computer Network LAB (BCSP-502)

Group-A1			Experiment -1				Experiment -2				Experiment -3				Experiment -4				Experiment -5				
S.N.	Roll No.	Name of Student	IP	IV	IR	TM																	
1	200120101001	AARUSH	3	2	3	8	2	3	4	10	2	2	3	7	3	2	3	8	2	2	3	7	
2	200120101002	ABHAY SAHU	3	2	3	9	3	2	4	9	3	2	4	9	3	2	3	8	3	2	4	9	
3	200120101003	ABHIJEET KUMAR	3	3	4	10	2	2	3	7	3	2	3	8	3	3	2	8	2	2	3	7	
4	200120101004	ABHISHEK PAL	2	2	3	7	3	2	3	8	3	3	4	10	3	3	4	10	3	3	4	10	
5	200120101005	ABHISHEK RAJ	3	2	3	8	3	2	4	9	2	2	3	7	2	2	3	7	2	2	3	7	
6	200120101006	ABHISHEK RAJ SINGH	3	2	4	9	3	2	4	9	3	2	4	9	3	2	4	9	3	3	4	10	
7	200120101007	ABHISHEK RAWAT	2	2	3	7	3	2	4	9	3	2	4	9	3	2	4	9	3	2	4	9	
8	200120101008	ABHISHEK SARASWAT	3	2	3	8	2	2	3	7	3	2	3	8	3	2	3	8	2	2	3	7	
9	200120101009	ADITYA CHOURHARY	3	2	4	9	3	2	4	9	3	2	4	9	3	2	4	9	3	2	4	9	
10	200120101010	ADITYA KUMAR	2	2	3	7	3	2	4	9	2	2	3	7	3	3	2	8	3	2	4	9	
11	200120101011	ADITYA KUMAR	3	2	3	8	2	2	3	7	3	2	3	8	2	2	3	7	2	2	3	7	
12	200120101012	AKASH GIRI	3	2	4	9	3	2	3	8	2	2	3	7	3	2	3	8	3	3	4	10	
13	200120101013	AKASH PATWAL	3	2	3	8	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10	
14	200120101014	AMAN ANSARI	3	2	4	9	3	2	4	9	3	2	3	8	3	3	4	10	3	2	3	8	
15	200120101015	AMAN ISHWAR	3	2	3	8	3	2	3	8	2	5	2	3	7.5	2	2	3	6	2	2	3	6
16	200120101016	AMAN KUMAR MALAIYA	3	2	4	9	3	3	4	10	3	2	3	8	3	3	4	10	3	3	4	10	

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UTTARAKHAND

Group-A1			Experiment-1				Experiment -2				Experiment -3				Experiment -4				Experiment -5			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
17	200120101017	AMIT BHARDWAJ	3	2	3	8	3	2	3	18	25	2	3	7.5	2	2	2	6	2	2	2	6
18	200120101018	ANJALI PRASAD	3	2	3	8	3	2	3	8	3	2	3	8	3	3	4	10	3	3	3	9
19	200120101019	ANKIT JHA	2	2	3	7	2	2	3	7	3	3	3	9	3	2	3	8	3	3	3	9
20	200120101020	ANKIT KUMAR	3	2	4	9	3	3	4	10	3	3	3	9	3	3	4	10	3	3	3	9
21	200120101021	ANKIT KUMAR	3	2	3	8	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10
22	200120101022	ANKIT KUMAR RAI	2	2	3	7	3	3	3	9	2	2	3	7	3	2	3	8	3	3	3	9
23	200120101023	ANKIT RAWAT	3	2	4	9	3	3	4	10	3	3	3	9	3	3	4	10	3	3	3	9
24	200120101024	ANURAG RAJ	3	2	3	8	2	3	3	8	3	2	3	8	2	2	2	6	3	2	3	8
25	200120101025	ANUSHKA .	3	2	3	8	3	2	3	8	3	2	3	8	3	3	4	10	3	3	3	9
26	200120101026	ANUSHKA RAJ KASHYAP	3	2	4	9	3	3	4	10	3	2	3	8	3	3	4	10	3	3	4	10
27	200120101027	Arpan Bharti	2	2	2	6	2	2	3	6	2	2	2	6	2	2	2	6	2	2	3	7
28	200120101028	ARPIT GOYAL	3	2	3	8	2	2	3	7	3	2	3	8	3	2	3	8	2	2	3	7
29	200120101029	ARPIT KUMAR	3	2	3	8	3	2	3	8	3	2	3	8	3	3	4	10	3	3	3	9
30	200120101030	ARVINDSINGHPUR IA	3	2	3	8	2	3	3	8	3	3	4	10	3	2	3	8	3	3	4	10
31	200120101031	ARYAN RAJ	2	2	3	7	2	2	3	7	3	3	2	8	2	2	3	7	2	2	3	7
32	200120101032	ATUL KUMAR	3	2	3	8	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10

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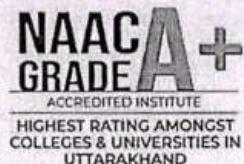
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Group-A2			Experiment-1				Experiment -2				Experiment -3				Experiment -4				Experiment -5			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
1	200120101033	AVINASH KUMAR JHA	2	2	3	7	3	3	3	9	2	2	3	7	3	2	3	8	3	3	3	9
2	200120101034	AVNISH SINGH	2	2	3	7	2	2	3	7	3	2	3	8	2	2	3	7	2	2	3	7
3	200120101035	AWADESH .	3	2	3	8	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10
4	200120101036	AWANISHPRATAPSINGH	3	2	3	8	3	2	3	8	3	2	3	8	3	3	4	10	3	3	3	9
5	200120101037	AYUSH A DUBEY	2	2	2	6	2	2	2	6	2	2	2	6	2	2	2	6	2	2	3	7
6	200120101038	AYUSH SHYAMLA	2	2	3	7	2	2	3	7	3	2	3	8	2	2	3	7	3	2	2	7
7	200120101039	BIKASH KUMAR	3	2	3	8	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10
8	200120101040	BIKASH SAH	2	3	3	8	3	2	3	8	2	3	3	8	2	3	3	8	3	2	3	8
9	200120101041	BINIT KUMAR KARN	3	3	2	8	3	3	2	8	3	2	3	8	3	3	4	10	3	3	3	9
10	200120101042	BINOD JOSHI	3	2	3	8	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10
11	200120101043	BISHAL KUMAR YADAV	2	3	3	8	3	3	2	8	3	2	3	8	3	3	4	10	3	3	3	9
12	200120101044	DHEERAJ SINGH	3	3	2	8	3	2	3	8	3	2	3	8	3	3	4	10	3	3	3	9
13	200120101045	DHIRENDRA SINGH	2	3	3	8	3	3	2	8	3	3	4	10	3	2	3	8	3	3	4	10
14	200120101046	GAUTAM KUMAR YADAV	2	2	2	6	2	2	2	6	2	2	2	6	2	2	2	6	2	2	3	7
15	200120101047	GOURAV BOHRA	3	3	3	9	3	3	4	10	2	3	3	8	3	3	4	10	3	3	4	10
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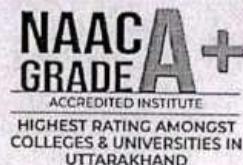
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S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	
17	200120101049	HARSH RAJ	2	2	2	6	2	2	2	6	2	2	2	6	2	2	3	6	3	2	2	7	
18	200120101050	HARSH UPADHYAY	2	3	3	7	3	2	2	7	3	2	3	8	2	3	3	7	2	2	3	7	
19	200120101051	HARSHIT KUMAR	2	3	3	8	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10	
20	200120101052	HIMANSHU RANJAN	2	2	2	6	2	2	2	6	2	2	2	6	2	2	2	6	3	2	2	7	
21	200120101053	IMRAN AHMED	3	2	3	8	3	2	3	8	3	2	3	8	3	3	4	10	3	3	3	9	
22	200120101054	JAI DHIMAN	3	3	2	8	3	3	3	9	3	3	2	8	2	3	3	8	3	2	3	8	
23	200120101055	KARTIKEYSINGHS ENGR	3	2	3	8	3	2	3	7	2	2	3	7	2	3	3	8	3	3	3	9	
24	200120101056	LOVE PRATAP	3	2	3	8	3	2	2	7	3	2	3	8	2	3	3	8	3	2	4	9	
25	200120101057	MANAS NEGI	3	2	3	8	3	2	3	8	3	2	3	8	3	3	4	10	3	2	4	9	
26	200120101058	MANAV.	3	2	3	8	3	3	4	10	3	2	3	8	3	2	3	8	3	3	4	10	
27	200120101059	MANIKANT KUMAR	3	3	4	10	3	3	4	10	3	3	3	9	3	3	3	9	3	3	4	10	
28	200120101060	MANISH KUMAR	3	2	3	8	3	2	3	8	2	5	3	2	7	5	2	2	2	6	2	2	2
29	200120101061	MANSI RAY	3	2	3	8	2	2	3	7	2	2	3	7	3	2	3	8	3	3	3	9	
30	200120101062	MD AARIF	2	2	3	7	3	2	2	7	3	2	3	8	3	2	2	7	2	3	2	7	
31	200120101063	MOHD.AFROZANS ARI	2	3	3	8	3	2	3	8	3	2	3	8	2	2	2	6	3	2	3	8	
32	200120101064	NITESH KUMAR	3	2	3	8	3	2	3	8	3	2	3	8	2	2	2	6	3	2	3	8	

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Group-A1			Experiment-6				Experiment -7				Experiment -8				Experiment -9				Experiment -10			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
1	200120101001	AARUSH	3	2	3	8	3	2	3	8	3	2	3	8	3	2	3	8	3	2	3	8
2	200120101002	ABHAY SAHU	3	3	3	9	3	3	3	9	3	3	3	9	3	3	3	9	3	3	3	9
3	200120101003	ABHIJEET KUMAR	3	3	2	8	3	2	2	7	3	2	3	8	3	2	3	8	3	2	3	8
4	200120101004	ABHISHEK PAL	3	3	3	9	3	3	3	9	3	3	3	9	3	3	3	9	3	3	3	9
5	200120101005	ABHISHEK RAJ	2	3	2	7	3	2	2	7	2	3	2	7	3	2	2	7	3	2	2	7
6	200120101006	ABHISHEK RAJ SINGH	3	3	4	10	3	3	4	10	3	3	3	9	3	3	3	9	3	3	4	10
7	200120101007	ABHISHEK RAWAT	3	2	3	8	3	3	4	10	3	3	3	9	3	3	4	10	3	3	4	10
8	200120101008	ABHISHEK SARASWAT	3	2	3	8	3	2	3	8	2	3	2	7	3	2	2	7	3	2	3	8
9	200120101009	ADITYA CHOUDHARY	3	3	3	9	3	3	3	9	3	3	3	9	3	3	3	9	3	3	3	9
10	200120101010	ADITYA KUMAR	3	2	3	8	3	2	3	8	3	2	3	8	3	2	3	7	3	2	3	8
11	200120101011	ADITYA KUMAR	3	2	3	8	3	2	2	7	3	2	3	8	2	2	3	7	3	3	3	9
12	200120101012	AKASH GIRI	3	3	2	8	2	3	3	8	3	3	4	10	3	2	3	8	3	2	3	8
13	200120101013	AKASH PATWAL	3	3	4	10	3	2	3	8	3	3	3	9	3	3	4	10	3	3	3	9
14	200120101014	AMAAAN ANSARI	3	3	4	10	3	2	3	8	3	3	3	9	3	3	3	9	3	2	3	8
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S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
17	200120101017	AMIT BHARDWAJ	2	2	3	7	2	2	2	6	2	2	2	6	3	2	2	7	3	2	2	7
18	200120101018	ANJALI PRASAD	3	3	3	9	3	3	3	9	3	2	3	8	3	2	3	8	3	3	3	9
19	200120101019	ANKIT JHA	3	2	3	8	3	2	3	8	3	2	3	8	2	3	2	7	3	2	3	8
20	200120101020	ANKIT KUMAR	3	3	4	10	3	3	4	10	3	3	4	10	3	3	3	9	3	3	3	9
21	200120101021	ANKIT KUMAR	3	3	4	10	3	2	3	8	3	3	3	9	3	3	4	10	3	3	3	9
22	200120101022	ANKIT KUMAR RAI	3	2	3	8	3	2	3	8	3	2	3	8	3	2	3	7	3	2	3	8
23	200120101023	ANKIT RAWAT	3	3	4	10	3	3	4	10	3	3	4	10	3	3	3	9	3	3	3	9
24	200120101024	ANURAG RAJ	3	2	2	7	2	2	2	6	3	3	3	9	3	2	2	7	3	3	3	9
25	200120101025	ANUSHKA .	3	3	3	9	3	3	3	9	3	2	3	8	3	2	3	8	3	3	3	9
26	200120101026	ANUSHKARAJKASH HYAP	3	3	3	9	3	3	4	10	3	3	4	10	3	3	3	9	3	3	4	10
27	200120101027	Arpan Bharti	2	2	2	6	3	2	3	8	3	2	3	8	2	2	2	6	3	2	2	7
28	200120101028	ARPIT GOYAL	3	2	3	8	3	2	3	8	2	3	2	7	3	2	2	7	3	2	3	8
29	200120101029	ARPIT KUMAR	3	3	3	9	3	3	3	9	3	2	3	8	3	2	3	8	3	3	3	9
30	200120101030	ARVINDSINGHAR PURIA	3	3	4	10	3	2	3	8	3	3	3	9	3	3	4	10	3	3	3	9
31	200120101031	ARYAN RAJ	2	2	3	7	3	2	3	8	3	2	3	8	2	2	2	6	3	2	2	7
32	200120101032	ATUL KUMAR	3	3	4	10	3	2	3	8	3	3	3	9	3	3	4	10	3	3	3	9

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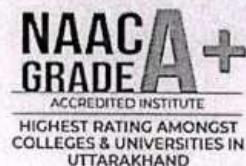
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Group-A2			Experiment-6				Experiment -7				Experiment -8				Experiment -9				Experiment -10			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
1	200120101033	AVINASH KUMAR JHA	3	2	3	8	3	2	2	7	3	2	3	8	3	2	3	8	3	2	3	8
2	200120101034	AVNISH SINGH	3	2	2	7	2	2	2	6	3	2	3	8	3	2	3	8	2	2	3	7
3	200120101035	AWADESH.	3	3	4	10	3	3	4	10	3	3	3	9	3	2	3	8	2	3	3	9
4	200120101036	AWANISHPRATAPSINGH	3	3	3	9	3	2	3	8	3	3	2	8	3	3	3	9	3	3	3	9
5	200120101037	AYUSH A DUBEY	2	2	2	6	2	2	2	6	3	2	3	8	3	2	3	8	3	2	2	7
6	200120101038	AYUSH SHYAMLA	3	2	2	7	2	2	2	6	3	3	2	8	3	3	2	8	3	2	2	7
7	200120101039	BIKASH KUMAR	3	3	4	10	3	3	4	10	3	3	3	9	3	2	3	8	3	3	3	9
8	200120101040	BIKASH SAH	2	3	2	7	3	2	3	7	3	3	3	9	3	2	3	8	3	3	3	9
9	200120101041	BINIT KUMAR KARN	3	3	3	9	3	2	3	8	3	2	3	8	3	3	3	9	3	3	3	9
10	200120101042	BINOD JOSHI	3	3	4	10	3	3	4	10	3	3	3	9	3	2	3	8	3	3	3	9
11	200120101043	BISHAL KUMAR YADAV	3	3	3	9	3	2	3	8	3	2	3	8	3	3	3	9	3	3	3	9
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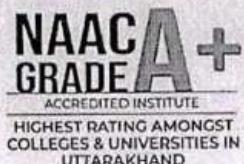
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Group-A2			Experiment-6				Experiment -7				Experiment -8				Experiment -9				Experiment -10			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
17	200120101049	HARSH RAJ	2	2	2	6	3	2	3	8	3	2	3	8	2	2	2	6	2	2	3	7
18	200120101050	HARSH UPADHYAY	3	2	2	7	3	2	3	8	3	2	3	8	2	2	2	6	2	2	3	7
19	200120101051	HARSHIT KUMAR	3	3	4	10	3	2	3	8	3	3	3	9	3	3	4	10	3	3	3	9
20	200120101052	HIMANSHU RANJAN	2	2	2	6	3	2	3	8	3	2	3	8	2	2	2	6	2	2	3	7
21	200120101053	IMRAN AHMED	3	3	3	9	3	3	3	9	3	2	3	8	3	2	3	8	3	3	3	9
22	200120101054	JAI DHIMAN	3	2	3	8	3	2	3	8.5	2	2	3	7	2	2	3	7	3	2	3	8
23	200120101055	KARTIKEYSINGH SENGR	3	2	3	8	3	2	3	8	3	2	3	8	3	2	3	8	3	3	3	9
24	200120101056	LOVE PRATAP	3	3	3	9	3	2	3	8	3	2	3	8	2	2	3	7	3	2	3	8
25	200120101057	MANAS NEGI	3	3	3	9	3	3	3	9	3	2	3	8	3	2	3	8	3	3	3	9
26	200120101058	MANAV.	3	3	3	9	3	3	4	10	3	2	3	8	3	3	4	10	3	3	3	9
27	200120101059	MANIKANT KUMAR	3	3	4	10	3	3	3	9	3	2	3	8	3	3	4	10	3	3	4	10
28	200120101060	MANISH KUMAR	3	2	2	7	3	2	2	6	2	2	2	6	3	2	2	7	3	2	2	7
29	200120101061	MANSI RAY	3	2	3	8	3	2	3	8	3	2	3	8	3	2	3	8	3	3	3	9
30	200120101062	MD AARIF	2	2	3	7	3	2	3	8	3	2	3	8	2	2	2	6	3	2	2	7
31	200120101063	MOHD.AFROZAN SARI	2	2	3	7	2	2	2	6	3	3	3	9	2	2	3	7	3	3	3	9

Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission:

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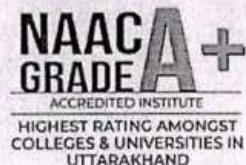
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32

200120101064

NITESH KUMAR

2	2	3	7	2	2	2	6	3	3	3	9	3	2	2	7	3	3	3	9
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Group-A1			Experiment-11 (BTS)				Experiment -12 (BTS)				Experiment-13 (BTS)				Experiment-14 (BTS)			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
1	200120101001	AARUSH	3	2	3	8	3	2	3	8	3	2	3	8	3	2	3	8
2	200120101002	ABHAY SAHU	3	3	3	9	3	3	3	9	3	3	4	10	3	3	3	9
3	200120101003	ABHIJEET KUMAR	3	2	3	8	3	3	3	9	3	2	3	8	3	2	3	8
4	200120101004	ABHISHEK PAL	3	2	4	9	3	3	3	9	3	3	3	9	3	3	3	9
5	200120101005	ABHISHEK RAJ	3	2	2	7	3	2	3	8	3	2	3	8	3	3	3	9
6	200120101006	ABHISHEK RAJ SINGH	3	3	4	10	3	3	4	10	3	3	3	9	3	3	4	10
7	200120101007	ABHISHEK RAWAT	3	2	3	8	3	3	4	10	3	2	3	8	3	3	4	10
8	200120101008	ABHISHEK SARASWAT	3	2	2	7	3	2	3	8	3	2	2	7	3	2	2	7
9	200120101009	ADITYA CHOUDHARY	3	2	4	9	3	3	3	9	3	3	3	9	3	3	3	9
10	200120101010	ADITYA KUMAR	3	2	3	8	3	2	3	8	3	2	3	8	3	3	3	9
11	200120101011	ADITYA KUMAR	3	3	2	8	3	2	2	7	3	2	2	7	2	2	3	7
12	200120101012	AKASH GIRI	3	2	4	9	3	2	3	8	3	2	3	8	3	3	4	10
13	200120101013	AKASH PATWAL	3	2	3	8	3	2	3	8	3	3	4	10	3	3	4	10
14	200120101014	AMAN ANSARI	3	3	3	9	3	3	4	10	3	3	3	9	3	3	4	10
15	200120101015	AMAN ISHWAR	2	2	2	6	3	2	3	7	3	2	2	7	2	2	2	6
16	200120101016	AMAN KUMAR MALAIYA	3	3	3	9	3	3	4	10	3	3	4	10	3	3	3	9

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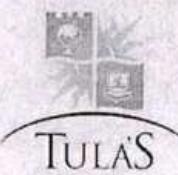
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Group-A1			Experiment-11 (BTS)				Experiment -12 (BTS)				Experiment-13 (BTS)				Experiment-14 (BTS)			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
17	200120101017	AMIT BHARDWAJ	2	2	2	6	3	2	2	7	3	2	2	7	2	2	2	6
18	200120101018	ANJALI PRASAD	3	2	3	8	3	2	2	7	3	3	3	9	3	3	3	9
19	200120101019	ANKIT JHA	3	2	3	8	3	2	8	8	3	2	3	8	3	3	3	9
20	200120101020	ANKIT KUMAR	3	3	4	10	3	3	3	9	3	3	3	9	3	3	4	10
21	200120101021	ANKIT KUMAR	3	2	3	8	3	3	2	8	3	2	4	10	3	3	4	10
22	200120101022	ANKIT KUMAR RAI	3	2	3	8	3	3	2	8	3	2	3	8	3	3	3	9
23	200120101023	ANKIT RAWAT	3	3	4	10	3	3	3	9	3	3	3	9	3	3	4	10
24	200120101024	ANURAG RAJ	3	2	2	7	3	2	2	7	3	3	3	9	2	2	2	6
25	200120101025	ANUSHKA .	3	2	3	8	3	2	2	7	3	3	3	9	3	3	3	9
26	200120101026	ANUSHKARAJKASH YAP	3	3	3	9	3	3	4	10	3	3	4	10	3	3	3	9
27	200120101027	Arpan Bharti	2	2	2	6	3	2	2	7	2	2	2	6	2	2	2	6
28	200120101028	ARPIT GOYAL	3	2	2	7	3	2	8	8	3	2	2	7	3	2	2	7
29	200120101029	ARPIT KUMAR	3	2	3	8	3	2	2	7	3	3	3	9	3	3	3	9
30	200120101030	ARVINDSINGHARPU RIA	3	2	3	8	2	3	3	8	3	3	4	10	3	3	4	10
31	200120101031	ARYAN RAJ	3	2	2	6	2	3	2	7	3	2	2	7	2	2	2	6
32	200120101032	ATUL KUMAR	3	2	8	8	3	2	3	8	3	3	4	10	3	3	4	10

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Group-A2			Experiment-11 (BTS)				Experiment -12 (BTS)				Experiment-13 (BTS)				Experiment-14 (BTS)			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
1	200120101033	AVINASH KUMAR JHA	3	2	3	8	3	2	3	8	3	2	3	8	3	3	3	9
2	200120101034	AVNISH SINGH	2	2	2	6	3	2	2	7	3	2	2	7	2	2	2	6
3	200120101035	AWADESH .	3	2	3	8	3	2	3	8	3	3	4	10	3	3	4	10
4	200120101036	AWANISHPRATAPSINGH	3	2	3	8	3	2	2	7	3	3	3	9	3	3	3	9
5	200120101037	AYUSH A DUBEY	2	2	2	6	2	2	3	7	2	2	2	6	2	2	2	6
6	200120101038	AYUSH SHYAMLA	2	2	2	6	2	2	3	7	3	2	2	7	2	2	2	6
7	200120101039	BIKASH KUMAR	3	2	3	8	3	2	3	8	3	3	4	10	3	3	4	10
8	200120101040	BIKASH SAH	3	2	3	8	3	2	3	8	3	2	2	7	3	3	3	9
9	200120101041	BINIT KUMAR KARN	3	2	3	8	3	2	2	7	3	3	3	9	3	3	3	9
10	200120101042	BINOD JOSHI	3	2	3	8	3	2	3	8	3	3	4	10	3	3	4	10
11	200120101043	BISHAL KUMAR YADAV	3	2	3	8	3	2	2	7	3	3	3	9	3	3	3	9
12	200120101044	DHEERAJ SINGH	3	2	2	8	3	2	2	7	3	3	3	9	3	3	3	9
13	200120101045	DHIRENDRA SINGH	3	2	3	8	3	2	3	8	3	3	4	10	3	3	4	10
14	200120101046	GAUTAM KUMAR YADAV	2	2	2	6	3	2	2	7	2	2	2	6	2	2	2	6
15	200120101047	GOURAV BOHRA	3	3	3	9	3	3	4	10	3	3	4	10	3	3	3	9
16	200120101048	HARSH KASHIWAL	3	2	3	8	3	2	3	8	3	3	4	10	3	3	4	10

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Group-A2			Experiment-11 (BTS)				Experiment -12 (BTS)				Experiment-13 (BTS)				Experiment-14 (BTS)			
S.N.	Roll No.	Name of Student	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM	IP	IV	IR	TM
17	200120101049	HARSH RAJ	2	2	2	6	3	2	2	7	2	2	2	6	2	2	2	6
18	200120101050	HARSH UPADHYAY	2	2	2	6	2	2	3	7	3	3	4	10	3	3	3	9
19	200120101051	HARSHIT KUMAR	3	2	3	8	3	2	3	8	3	3	4	10	3	3	4	10
20	200120101052	HIMANSHU RANJAN	2	2	2	6	2	2	3	7	2	2	2	6	2	2	2	6
21	200120101053	IMRAN AHMED	3	2	3	8	3	2	2	7	3	3	3	9	3	3	3	9
22	200120101054	JAI DHIMAN	3	2	2	7	3	2	3	8	3	2	2	7	3	2	2	7
23	200120101055	KARTIKEYSINGHSENGR	3	2	3	8	3	2	2	7	3	3	3	9	3	2	3	8
24	200120101056	LOVE PRATAP	3	2	2	8	3	2	2	7	3	3	3	9	3	2	3	8
25	200120101057	MANAS NEGI	3	2	3	8	2	2	3	7	3	2	4	9	3	3	3	9
26	200120101058	MANAV .	3	2	3	8	3	3	4	10	3	3	3	9	3	3	3	9
27	200120101059	MANIKANT KUMAR	3	3	4	10	3	3	3	9	3	3	3	9	3	3	4	10
28	200120101060	MANISH KUMAR	2	2	2	6	3	2	2	7	3	2	2	7	2	2	2	6
29	200120101061	MANSI RAY	3	3	9	8	2	2	3	7	3	3	3	9	3	3	2	8
30	200120101062	MD AARIF	3	3	2	6	2	2	3	7	3	2	2	7	2	2	2	6
31	200120101063	MOHD.AFROZANSARI	3	2	2	7	3	2	2	7	3	3	3	9	2	2	2	6
32	200120101064	NITESH KUMAR	3	2	2	7	3	2	2	7	3	3	3	9	2	2	2	6

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14. Lab Do's and Do Not's

Do's

- Do log off the computers when you finish. Make entry in the Log Book as soon as you enter the Laboratory.
- All the students should sit according to their Roll numbers starting from left to right.
- Turn off the machine when you are no longer using it.
- Report any broken plugs or exposed electrical wires to the teacher immediately.
- Always SAVE your progress.
- Always maintain an extra copy of all your data-files.
- Make sure your external devices are VIRUS FREE.
- Do ask for assistance in downloading any software.
- If you are the last one leaving the LAB, make sure that the staff in charge of the LAB is informed to close the LAB.
- Feel free to ask for assistance.
- Behave properly.

Do Not's

- Do not eat or drink inside the laboratory.
- Avoid stepping on electrical wires or any other computer cables.
- Do not open the system unit casing or monitor casing particularly when the power is turned on (30,000 volts).
- Do not insert metal objects such as clips, pins, and needles into the computer casings.
- Do not remove anything from the computer laboratory without permission.
- Do not touch, connect, or disconnect any plug or cable without permission.
- Do not touch any circuit boards and power sockets when something is connected to them or switched one.
- Do not open an external device without scanning them for computer viruses.
- Do not change the icons on the computer screen.
- Do not switch the keyboard letters around.
- Do not go to programs you don't know of.
- Do not install any other programs unless told.
- Do not unplug anything unless the computer has properly shut down.
- Do not copy the work of other students.
- Do not attempt to repair, open, tamper, or interfere with anything inside the lab.
- Do not plug any other devices.

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15. Lab Safety Rules

- Do not bring any food or drinks near the machine.
- Turn off the machine once you are done using it.
- Do not plug in external devices without scanning them for computer viruses.
- Ensure that the temperature in the room stays cool, since there are a lot of machines inside a lab as these can overheat easily. This is one of the many ways of ensuring computer safety.
- Try not to touch any of the circuit boards and power sockets when a device is connected to them and switched on.

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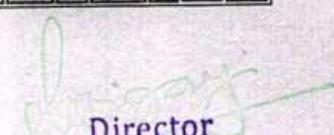


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TULA'S INSTITUTE DEHRADUN																															
COURSE NAME						Computer Networks Lab																									
COURSE CODE						BCSP-502			PROGRAM				B.TECH																		
BRANCH						CSE			YEAR				3rd																		
SEMESTER						5th																									
S.N	ROLL No.	STUDENT'S NAME						PSE I		PSE I		PSE II		PSE II		SESS		CO1 Attended Y/N		CO2 Attended Y/N		CO3 Attended Y/N		CO4 Attended Y/N		CO5 Attended Y/N		SEE		CO Attended Y/N	
		10	10	5	10	5		10	10	5	10	5		20	20		10	10	5	10	5	30									
1	180120101042	MANOJ KUMAR	8	10	18	2	7	3	12	15	Y	Y	N	N	N	23	Y														
2	200120101001	AARUSH	8	6	14	4	9	5	18	16	Y	N	Y	Y	Y	21	Y														
3	200120101002	ABHAY SAHU	6	10	16	5	10	5	20	18	N	Y	Y	Y	Y	23	Y														
4	200120101003	ABHIJEET KUMAR	6	8	14	5	8	5	18	16	N	Y	Y	Y	Y	22	Y														
5	200120101004	ABHISHEK PAL	8	8	16	5	10	5	20	18	Y	Y	Y	Y	Y	28	Y														
6	200120101005	ABHISHEK RAJ	8	7	15	5	7	3	15	15	Y	N	Y	N	N	22	Y														
7	200120101006	ABHISHEK RAJ SINGH	8	10	18	5	10	5	20	19	Y	Y	Y	Y	Y	28	Y														
8	200120101007	ABHISHEK RAWAT	8	8	16	5	10	5	20	18	Y	Y	Y	Y	Y	25	Y														
9	200120101008	ABHISHEK SARASWAT	7	7	14	5	6	5	16	15	N	N	Y	N	Y	21	Y														
10	200120101009	ADITYA CHAUDHARY	7	9	16	5	10	5	20	18	N	Y	Y	Y	Y	26	Y														
11	200120101010	ADITYA KUMAR	8	10	18	4	6	4	14	16	Y	Y	Y	N	Y	24	Y														
12	200120101011	ADITYA KUMAR	8	9	17	2	8	3	13	15	Y	Y	N	Y	N	21	Y														
13	200120101012	AKASH GIRI	8	10	18	5	7	4	16	17	Y	Y	Y	N	Y	28	Y														
14	200120101013	AKASH PATWAL	8	10	18	3	10	5	18	18	Y	Y	N	Y	Y	28	Y														
15	200120101014	AMAAN ANSARI	8	8	16	5	10	5	20	18	Y	Y	Y	Y	Y	24	Y														
16	200120101015	AMAN ISHWAR	7	7	14	5	7	1	13	14	N	N	Y	N	N	21	Y														
17	200120101016	AMAN KUMAR MALAIYA	8	10	18	5	10	5	20	19	Y	Y	Y	Y	Y	29	Y														
18	200120101017	AMIT BHARDWAJ	8	8	16	4	6	1	11	14	Y	Y	Y	N	N	21	Y														
19	200120101018	ANJALI PRASAD	9	7	16	3	10	5	18	17	Y	N	N	Y	Y	27	Y														
20	200120101019	ANKIT JHA	6	6	12	5	10	5	20	16	N	N	Y	Y	Y	22	Y														

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21	200120101020	ANKIT KUMAR	8	10	18	5	10	5	20	19	Y	Y	Y	Y	Y	24	Y
22	200120101021	ANKIT KUMAR	8	8	16	5	10	5	20	18	Y	Y	Y	Y	Y	23	Y
23	200120101022	ANKIT KUMAR RAI	8	10	18	4	6	4	14	16	Y	Y	Y	N	Y	25	Y
24	200120101023	ANKIT RAWAT	8	10	18	5	10	5	20	19	Y	Y	Y	Y	Y	29	Y
25	200120101024	ANURAG RAJ	7	7	14	5	7	4	16	15	N	N	Y	N	Y	25	Y
26	200120101025	ANUSHKA	6	9	15	4	10	5	19	17	N	Y	Y	Y	Y	26	Y
27	200120101026	ANUSHKA RAJ KASHYAP	8	10	18	5	10	5	20	19	Y	Y	Y	Y	Y	27	Y
28	200120101027	ARPAN BHARTI	7	7	14	4	6	2	12	13	N	N	Y	N	N	20	Y
29	200120101028	ARPIT GOYAL	5	7	12	5	8	5	18	15	N	N	Y	Y	Y	22	Y
30	200120101029	ARPIT KUMAR	7	7	14	5	10	5	20	17	N	N	Y	Y	Y	23	Y
31	200120101030	ARVIND SINGHPURIA	9	7	16	5	10	5	20	18	Y	N	Y	Y	Y	27	Y
32	200120101031	ARYAN RAJ	8	5	13	4	6	5	15	14	Y	N	Y	N	Y	19	Y
33	200120101032	ATUL KUMAR	7	10	17	4	10	5	19	18	N	Y	Y	Y	Y	24	Y
34	200120101033	AVINASH KUMAR JHA	7	9	16	5	8	3	16	16	N	Y	Y	Y	N	22	Y
35	200120101034	AVNISH SINGH	7	9	16	3	6	3	12	14	N	Y	N	N	N	20	Y
36	200120101035	AWADESH	7	9	16	5	10	5	20	18	N	Y	Y	Y	Y	28	Y
37	200120101036	AWANISH PRATAP SINGH	8	9	17	4	8	5	17	17	Y	Y	Y	Y	Y	25	Y
38	200120101037	AYUSH DUBEY	7	10	17	3	6	0	9	13	N	Y	N	N	N	20	Y
39	200120101038	AYUSH SHYAMLA	9	8	17	4	5	2	11	14	Y	Y	Y	N	N	20	Y
40	200120101039	BIKASH KUMAR	7	9	16	5	10	5	20	18	N	Y	Y	Y	Y	22	Y
41	200120101040	BIKASH SAH	8	10	18	4	5	5	14	16	Y	Y	Y	N	Y	23	Y
42	200120101041	BINIT KUMAR KARN	6	9	15	4	10	5	19	17	N	Y	Y	Y	Y	24	Y
43	200120101042	BINOD JOSHI	10	6	16	5	10	5	20	18	Y	N	Y	Y	Y	25	Y
44	200120101043	BISHAL KUMAR YADAV	7	10	17	4	8	5	17	17	N	Y	Y	Y	Y	25	Y
45	200120101044	DHEERAJ SINGH	8	10	18	2	9	5	16	17	Y	Y	N	Y	Y	23	Y
46	200120101045	DHIRENDRA SINGH	6	10	16	5	10	5	20	18	N	Y	Y	Y	Y	26	Y
47	200120101046	GAUTAM KUMAR YADAV	8	7	15	5	5	1	11	13	Y	N	Y	N	N	19	Y
48	200120101047	GOURAV BOHRA	8	10	18	5	10	5	20	19	Y	Y	Y	Y	Y	26	Y
49	200120101048	HARSH KASHIWAL	8	8	16	5	10	5	20	18	Y	Y	Y	Y	Y	28	Y
50	200120101049	HARSH RAJ	7	5	12	5	6	3	14	13	N	N	Y	N	N	23	Y
51	200120101050	HARSH UPADHYAY	10	3	13	3	7	5	15	14	Y	N	N	N	Y	25	Y


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52	200120101051	HARSHIT KUMAR	9	7	16	5	10	5	20	18	Y	N	Y	Y	Y	26	Y
53	200120101052	HIMANSHU RANJAN	9	5	14	3	8	1	12	15	Y	N	N	Y	N	24	Y
54	200120101053	IMRAN AHMED	5	9	14	5	10	5	20	17	N	Y	Y	Y	Y	25	Y
55	200120101054	JAI DHIMAN	10	8	18	5	7	1	13	16	Y	Y	Y	N	N	25	Y
56	200120101055	KARTIKEY SINGH SENDER	6	10	16	3	8	5	16	16	N	Y	N	Y	Y	26	Y
57	200120101056	LOVE PRATAP	7	7	14	3	10	5	18	16	N	N	N	Y	Y	26	Y
58	200120101057	MANAS NEGI	6	10	16	3	10	5	18	17	N	Y	N	Y	Y	29	Y
59	200120101058	MANAV	6	10	16	5	10	5	20	18	N	Y	Y	Y	Y	25	Y
60	200120101059	MANIKANT KUMAR	8	10	18	5	10	5	20	19	Y	Y	Y	Y	Y	28	Y
61	200120101060	MANISH KUMAR	9	7	16	4	6	1	11	14	Y	N	Y	N	N	20	Y
62	200120101061	MANSI RAY	8	10	18	5	8	1	14	16	Y	Y	Y	Y	N	26	Y
63	200120101062	MOHAMMAD AARIF	5	8	13	3	7	5	15	14	N	Y	N	N	Y	23	Y
64	200120101063	MOHAMMED AFROZ ANSARI	9	9	18	4	5	3	12	15	Y	Y	Y	N	N	23	Y
65	200120101064	NITESH KUMAR	9	9	18	3	7	2	12	15	Y	Y	N	N	N	22	Y
66	200120101065	PALLAVI PRITI	5	10	15	4	10	5	19	17	N	Y	Y	Y	Y	27	Y
67	200120101066	PARAS NEGI	7	10	17	3	5	3	11	14	N	Y	N	N	N	20	Y
68	200120101067	PAWAN KUMAR SINGH	8	4	12	4	7	5	16	14	Y	N	Y	N	Y	21	Y
69	200120101068	PRABHAT KAINTHOLA	9	6	15	5	7	5	17	16	Y	N	Y	N	Y	25	Y
70	200120101069	PRANAV KUMAR CHAUDHARY	6	10	16	5	10	5	20	18	N	Y	Y	Y	Y	27	Y
71	200120101070	PRATEEK MISHRA	8	10	18	4	4	1	9	14	Y	Y	Y	N	N	19	Y
72	200120101071	PRATIK KUMAR OJHA	10	2	12	2	7	5	14	13	Y	N	N	N	Y	26	Y
73	200120101072	PRATYUSH RAJ	10	8	18	3	5	1	9	14	Y	Y	N	N	N	19	Y
74	200120101073	PRINCE RAJ	7	8	15	4	8	5	17	16	N	Y	Y	Y	Y	24	Y
75	200120101074	PRIYANSHI RAWAT	7	7	14	5	10	5	20	17	N	N	Y	Y	Y	27	Y
76	200120101075	PRIYANSHU DEEP	5	8	13	5	7	3	15	14	N	Y	Y	N	N	22	Y
77	200120101076	PULKIT MOHAN	9	6	15	4	8	5	17	16	Y	N	Y	Y	Y	24	Y
78	200120101078	RAHUL YADAV	9	6	15	3	9	5	17	16	Y	N	N	Y	Y	26	Y
79	200120101079	RAJAT SINGH RAWAT	8	10	18	3	10	5	18	18	Y	Y	N	Y	Y	27	Y
80	200120101080	RANJEET SAH TELEE	7	8	15	4	10	5	19	17	N	Y	Y	Y	Y	25	Y
81	200120101081	RAUNAK KUMAR	7	7	14	5	8	3	16	15	N	N	Y	Y	N	22	Y
82	200120101082	RITESH CHANDRA VERMA	6	10	16	4	5	1	10	13	N	Y	Y	N	N	20	Y


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83	200120101083	RITIKA SINGH	9	7	16	4	6	0	10	13	Y	N	Y	N	N	22	Y
84	200120101084	ROHIT BISHT	7	10	17	4	8	1	13	15	N	Y	Y	Y	N	24	Y
85	200120101085	RUDRAKSH AGGARWAL	7	9	16	5	5	4	14	15	N	Y	Y	N	Y	25	Y
86	200120101086	SANGEET SINGH RAWAT	7	9	16	4	7	3	14	15	N	Y	Y	N	N	23	Y
87	200120101087	SARTHAK RANA	10	2	12	4	7	5	16	14	Y	N	Y	N	Y	26	Y
88	200120101088	SAURABH KUMAR	10	5	15	5	6	0	11	13	Y	N	Y	N	N	19	Y
89	200120101089	SAURABH YADAV	6	8	14	5	10	5	20	17	N	Y	Y	Y	Y	23	Y
90	200120101090	SHANA PARVEEN	10	7	17	5	9	5	19	18	Y	N	Y	Y	Y	27	Y
91	200120101091	SHANTANU CHAUHAN	8	9	17	3	7	1	11	14	Y	Y	N	N	N	23	Y
92	200120101092	SHIVAM CHAUHAN	10	6	16	2	7	5	14	15	Y	N	N	N	Y	27	Y
93	200120101094	SHIVAM SAINI	7	10	17	4	6	1	11	14	N	Y	Y	N	N	25	Y
94	200120101095	SHIVAM SHUKLA	8	4	12	3	10	5	18	15	Y	N	N	Y	Y	25	Y
95	200120101096	SHIVAM SINGH	7	10	17	4	10	5	19	18	N	Y	Y	Y	Y	27	Y
96	200120101097	SHIVANI KUMARI	10	4	14	5	10	5	20	17	Y	N	Y	Y	Y	26	Y
97	200120101098	SNEH SHISH TIWARI	7	10	17	5	6	2	13	15	N	Y	Y	N	N	28	Y
98	200120101099	SNEHA JOSHI	9	8	17	5	6	0	11	14	Y	Y	Y	N	N	20	Y
99	200120101100	SNEHA SHARMA	9	7	16	5	10	5	20	18	Y	N	Y	Y	Y	28	Y
100	200120101101	SONAL RAJ	7	10	17	5	4	1	10	14	N	Y	Y	N	N	20	Y
101	200120101102	SUMESH MAKHija	7	10	17	2	5	4	11	14	N	Y	N	N	Y	22	Y
102	200120101103	SUMIT RANA	7	10	17	5	6	2	13	15	N	Y	Y	N	N	24	Y
103	200120101104	SURAJ KUMAR	9	8	17	3	7	5	15	16	Y	Y	N	N	Y	25	Y
104	200120101105	SURAJ SINGH PUJARI	9	9	18	3	8	1	12	15	Y	Y	N	Y	N	26	Y
105	200120101106	SWEETY KUMARI	9	7	16	4	6	0	10	13	Y	N	Y	N	N	21	Y
106	200120101107	UJJWAL SINGH	9	5	14	5	8	5	18	16	Y	N	Y	Y	Y	24	Y
107	200120101108	VAISHNAVI	8	10	18	4	8	2	14	16	Y	Y	V	Y	N	25	Y
108	200120101109	VIKASH SINGH	8	8	16	4	5	1	10	13	Y	Y	Y	N	N	19	Y
109	200120101110	VINAYAK DHAR	9	8	17	4	8	5	17	17	Y	Y	Y	Y	Y	25	Y
110	200120101111	VINAYAK NARAYAN SINGH	9	4	13	5	5	3	13	13	Y	N	Y	N	N	19	Y
111	200120101112	VIRAT SINGH	7	6	13	3	9	5	17	15	N	N	N	Y	Y	25	Y
112	200120101113	VIRENDRA KUMAR YADAV	8	9	17	5	7	1	13	15	Y	Y	Y	N	N	22	Y

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Total No. of Students Obtained Y	73	79	95	73	81	126
Total No. of Students Obtained N	53	47	31	53	45	0
Total No. of Students AB						0
%age Attainment	57.9	62.7	75.4	57.9	64.3	100.0
CO Wise AttainmentLevel	2	3	3	2	3	3
THRESHOLD	7.5	7.5	3.75	7.5	3.75	16.5
THRESHOLD PERCENTAGE %	75	75	75	75	75	55

[Signature]
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Innovative Learning Practices

Innovations by the Faculty in Teaching and Learning

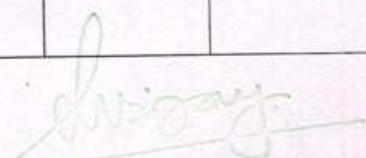
Innovations by the Faculty in teaching and learning shall be summarized as per the following description.

Contributions to teaching and learning are activities that contribute to the improvement of student learning. These activities may include innovations not limited to, use of ICT, instruction delivery, instructional methods, assessment, evaluation and inclusive classrooms that lead to effective, efficient and engaging instruction. Any contributions to teaching and learning should satisfy the following criteria:

- The work must be made available on Institute website
- The work must be available for peer review and critique
- The work must be reproducible and developed further by other scholars

The department/institution may set up appropriate processes for making the contributions available to the public, getting them reviewed and for rewarding. These may typically include statement of clear goals, adequate preparation, use of appropriate methods, and significance of results, effective presentation and reflective critique

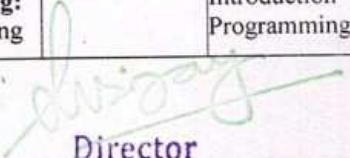
S. No.	Name of the innovations	Description	Impact	Initiated By	Courses
1	Interactive Online Circuit Simulator	<ul style="list-style-type: none"> • Brief Overview: An online platform that allows students to design, simulate, and test electronic circuits virtually. • Use of ICT/Technology: Incorporates a web-based circuit simulation tool, enabling real-time collaboration and experimentation. • Instructional Methods: Combines traditional teaching with hands-on virtual labs. Students can build and test circuits without needing physical components. • Assessment and Evaluation Techniques: Students are evaluated based on their circuit designs, simulation results, and online quizzes. • Inclusivity in Classrooms: Accessible to students who cannot physically attend labs, including remote learners and those with mobility challenges. 	<ul style="list-style-type: none"> • On Student Learning: Enhanced practical understanding of electronic circuit design. Increased student engagement and experimentation without the fear of damaging physical components. • On Faculty: Enables faculty to monitor and guide individual student projects remotely. Provides data-driven insights into student learning patterns. • Broader Implications: Promotes the integration of virtual simulation tools in engineering education. 		Basic Electronic Circuits, Digital System Design, Microelectronics, Advanced Communication Systems



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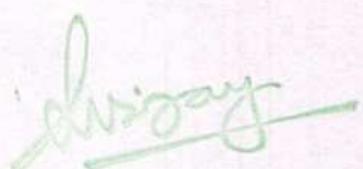
2	AI-Powered IoT Lab with Machine Learning Integration	<ul style="list-style-type: none"> Brief Overview: An advanced laboratory setup where students can develop and test IoT devices integrated with AI and ML algorithms. Use of ICT/Technology: Features a cloud-based platform for students to program and remotely monitor IoT devices. Incorporates AI and ML tools for data analysis and predictive modeling. Instructional Methods: Project-based learning where students work on real-world problems, using IoT to collect data and ML algorithms to analyze it. Assessment and Evaluation Techniques: Assessment through project deliverables, peer reviews, and a reflective report detailing the learning process and outcomes. Inclusivity in Classrooms: Encourages diverse teams, ensuring participation from students with various skill levels and backgrounds. Online access to lab resources provides flexibility for remote learners. 	<ul style="list-style-type: none"> On Student Learning: Enhances practical skills in IoT, AI, and ML. Prepares students for the evolving tech industry by offering hands-on experience with current technologies. On Faculty: Empowers faculty with modern tools to teach complex concepts in an interactive and engaging manner. Facilitates research in cutting-edge technology areas. Broader Implications: Promotes interdisciplinary learning, integrating electronics, computer science, and data analytics. 	Introduction to IoT, AI for Embedded Systems, Machine Learning Applications, Advanced Programming Techniques
3	Collaborative Web Design Studio	<ul style="list-style-type: none"> Brief Overview: A virtual studio environment where students collaborate to design, develop, and deploy responsive and accessible websites. Use of ICT/Technology: Utilizes a cloud-based development environment and collaborative tools like Git, enabling real-time teamwork and version control. Instructional Methods: Project-based learning approach where students work in teams to create real-world web design projects for community organizations 	<ul style="list-style-type: none"> On Student Learning: Develops practical skills in modern web technologies, teamwork, and project management. Enhances understanding of user-centered design and accessibility. On Faculty: Facilitates a dynamic teaching environment, allowing faculty to mentor students in real-life project settings. Broader Implications: Prepares students for industry demands in web design and development. Encourages community engagement through 	Introduction to Web Design, Advanced Web Development, User Interface Design, Digital Accessibility

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		<ul style="list-style-type: none"> or campus initiatives. Assessment and Evaluation Techniques: Continuous assessment based on project milestones, peer reviews, and final project presentations. Emphasis on design principles, coding standards, and user experience. Inclusivity in Classrooms: Encourages participation from students of all backgrounds and skill levels, including those interested in design, development, or project management aspects of web design. 	practical projects.		
4	UX/UI Design Sandbox	<ul style="list-style-type: none"> Brief Overview: An interactive platform where students engage in creating user interfaces (UI) and improving user experience (UX) for web applications, focusing on usability, aesthetics, and functionality. Use of ICT/Technology: Incorporates design software like Adobe XD, Figma, and Sketch, along with web development tools for prototyping and testing user interfaces. Instructional Methods: Employs a hands-on, iterative design process where students receive immediate feedback on their designs through user testing sessions and peer reviews. Assessment and Evaluation Techniques: Evaluation based on design portfolios, usability reports, and peer-assessed presentations showcasing their UI/UX projects. Inclusivity in Classrooms: Encourages diversity in design thinking by involving students from various disciplines and promoting inclusive design practices. 	<ul style="list-style-type: none"> On Student Learning: Enhances skills in modern UI/UX design practices, fostering creativity and critical thinking about user-centered design. On Faculty: Provides faculty with a dynamic teaching environment, bridging theoretical concepts with practical application. Broader Implications: Highlights the importance of UI/UX in software development, preparing students for roles in the evolving tech industry. 	User Experience Design, Interface Design Principles, Web Development Fundamentals, Advanced UI/UX Techniques	
5	AI-Driven	<ul style="list-style-type: none"> Brief Overview: A cutting-edge laboratory setup where 	<ul style="list-style-type: none"> On Student Learning: Enhances coding 	Introduction to Programming,	 Director Tula's Institute, Dehradun

	Code Analysis Lab	<p>students use and develop AI tools to analyze, optimize, and improve coding practices.</p> <ul style="list-style-type: none"> Use of ICT/Technology: Incorporates AI-based code review tools and machine learning algorithms to analyze code patterns, suggest optimizations, and identify potential errors. Instructional Methods: Combines traditional programming instruction with the use of AI tools, encouraging students to iteratively improve their coding skills through AI feedback. Assessment and Evaluation Techniques: Students are assessed based on their ability to iteratively improve their code, use AI tools effectively, and understand the underlying principles of AI-driven code analysis. Inclusivity in Classrooms: Promotes an environment where students with various programming skill levels can learn and improve at their own pace, leveraging AI assistance. 	<p>proficiency, fosters an understanding of AI applications in software development, and encourages best coding practices.</p> <ul style="list-style-type: none"> On Faculty: Enables faculty to provide more personalized and data-driven feedback, and to focus on higher-level conceptual teaching. Broader Implications: Prepares students for the AI-augmented future of software development and promotes the integration of AI in coding education. 	Advanced Software Development, Artificial Intelligence in Software Engineering, Data Structures and Algorithms
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Innovations by the Faculty in Teaching Learning Process



Director
Tula's Institute, Dehradun

Industrial Visit & Field Trip

Ref.No: Tula's/Director/04023/08

Date: 24/04/2023

To,

THE EXECUTIVE ENGINEER (M&G),
DHALIPUR POWER STATION.
UJVNL DHALIPUR, DEHRADUN

Subject: Seeking permission for Industrial Visit of Mechanical Engineering Students

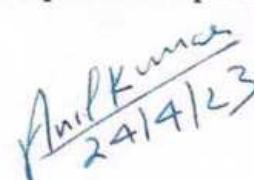
Dear Sir /Madam,

I am writing this letter to seek your permission for the Industry visit at your industry. I would like to share that we seek your permission for the industry visit in April/May 2023 for our Mechanical Engineering Department students in order to give them an insight about the way things work in the real life scenario. The visit is aimed at enhancing their knowledge. We intend to take a round of the entire industry and show the tasks handled in different departments to our students.

I hope you will allow us the opportunity to visit your industry and meet your skilled staff. So please give me the visit date in April/May 2023. I anticipate a positive response from your end.

We solicit your cooperation in this matter.

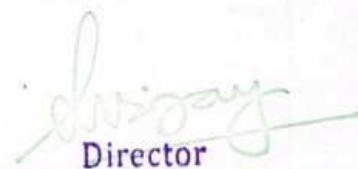
Yours Sincerely,



Anil Kumar
24/4/23

Prof. (Dr.) Anil Kumar

(Director)
Tula's Institute, Dehradun



Director
Tula's Institute, Dehradun

Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research

Mission:

- To Promote intellectual and skilled human capital generating employment and entrepreneurship
- To Be educational centre of excellence of multi ethnicity and diversity
- To Establish as technology driven teaching learning institution
- To Provide world class platform for research and innovation
- To Inculcate social, environmental, heritage values



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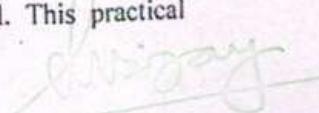
Press Release of Industrial Visit at Dhalipur Hydroelectric Power Plant

The Society of Mechanical Engineering, Tula's Institute conducted a visit at Dhalipur Hydroelectric power plant, UJVNL, Dehradun" on 9 May 2023. The main focus is to provide knowledge about the working of hydroelectric power plant working and conversion of energy from one form to another; it also leads to enhance knowledge of students of practical working of power plant and modern technologies which are being used presently and in future. It utilises 200 cumecs of water by constructing a 516.5 m long gated barrage across river Yamuna at Dakpathar, 3 km. downstream of Kalsi (Dehradun), into a 13.6 km. long lined power channel. Two power houses first at Dhakrani with an installed capacity 33.75 MW and the second at the tail end Dhalipur with an installed capacity 51.0 MW were constructed to generate hydro power utilizing the available drop of about 50 m. in this reach. At hydropower plants water flows through a pipe, or penstock, then pushes against and turns blades in a turbine that spin to power a generator to produce electricity. Conventional hydroelectric facilities include: Run-of-the-river systems, where the force of the river's current applies pressure on a turbine.

Key Learning of Industrial Visit for Students

Industrial visit is a vital part of engineering courses. It helps to bridge the gap between classroom and the real field world. Students are benefited to learn about "real life" examples of engineering management.

- **Opportunity to interact with Industry Experts:** Industrial visits provide students with a chance to meet industry leaders, professionals, entrepreneurs, policymakers, and corporate who share their wisdom, learning, and experiences. These interactions are useful to students in their career and help them in developing leadership qualities, management skills, and learn about the industry working. Industry interaction is also helpful in updating the curriculum when there are significant changes in prevalent technologies; also, the faculty members get to know about the industry's latest trends.
- **Learning experience:** Educational tours to industries provide an opportunity for students to see and experience real workstations, plants, machines, systems, assembly lines, and interact with highly trained and experienced personnel. This practical



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learning experience is necessary for students who have to date studied theory only and are unaware of a real production plant's daily workings. The students learn about company policies in terms of production, quality, and service management and acquaint themselves with the working of instruments during the course curriculum.

- **Enhanced employability and PPO's:** Industrial visits play a crucial role in increasing networking opportunities while building a good relationship with companies. For students, such trips open many doors for corporate training and internships, which in turn increase the students' employability. Often times, many students are offered PPO's as a result of fruitful interaction between the company's HR and students.
- **Management Lessons:** During the industrial visits, the students get an opportunity to experience how professionals live, learn about various management concepts like Just In Time or Lean manufacturing and how they are put into action. It is not easy to manage hundreds of skilled and unskilled workers at the same time and meet the stringent quality norms and production targets of the company. How managers, production engineers, employees work in tandem to achieve a common target is a management lesson in itself. And therefore, such exposure during the industrial visit is quite beneficial for students.
- **Interpersonal skills enhancement:** Industrial trips help students to enhance their interpersonal, communication skills, and teamwork abilities. These visits have, time and again, proved to be an excellent platform for networking as the students interact and connect with the corporate via official social media platforms like Face book, Linked In, and Twitter. These educational/ industrial trips also help the students identify their learning towards a branch and decide their future work areas like marketing, finance, operations, IT, HR, etc.
- **Day off from the usual melancholy:** Finally, these industrial visits provide the student's much-needed break from the usual melancholic theory classes and students get a chance to engage in fun learning. The students get an opportunity to learn something outside the four walls of their college.



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EVENT POSTER



**TULA'S
DEHRADUN**

NAAC A+

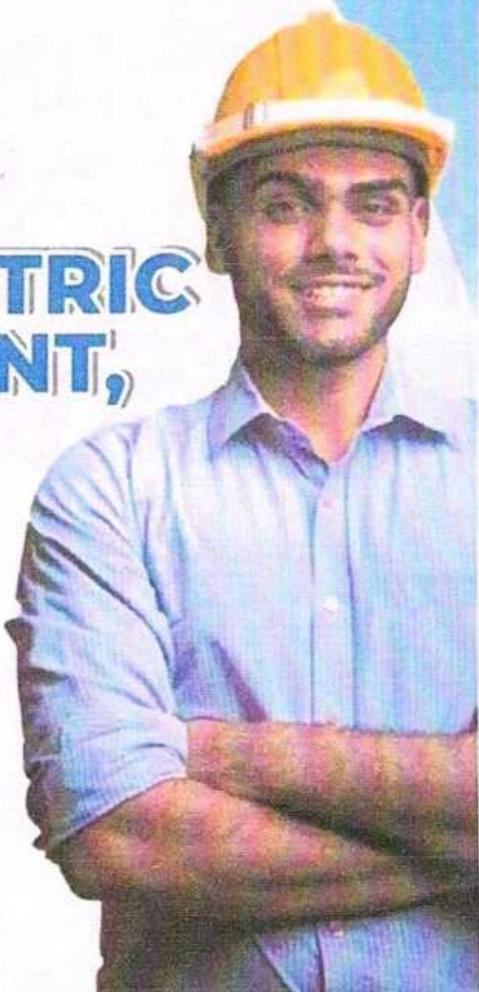


**DEPARTMENT OF
MECHANICAL ENGINEERING
IS ORGANIZING
AN INDUSTRIAL VISIT AT**

DHALIPUR HYDROELECTRIC POWER PLANT, UJVNL DEHRADUN

9TH MAY, 2023

**TIME: 9:30 AM ONWARDS
VENUE: DHALIPUR, UJVNL,
DEHRADUN**



Call to find out more
91-6366937159



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Director
Tula's Institute, Dehradun

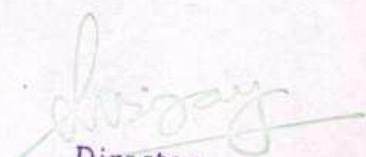
Live Attendance



Departure for the Visit



Dhalipur Hydro Power Plant


Director
Tula's Institute, Dehradun



Getting Ready for Company Tour



Completion of Power Plant Tour

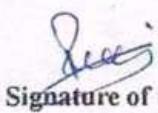
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Director
Tula's Institute, Dehradun

Undertaking

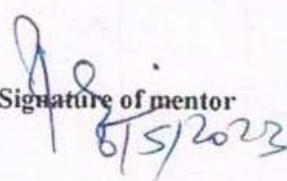
I Pankaj Kumar Shah S/o.D/o: Madan Shah
R/O: D.Kaathar mobile no: 8859746610 Course: B.Tech
Semester: 8th Roll no: 190120104012 Session: 2022-23 Year: 2023

Do hereby undertaking the following:

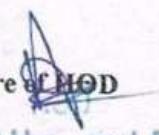
1. That I am a regular student of B.Tech 4th year and on the rolls of the 190120104012 Department.
2. That I hereby declare that on my own will and wish and without any force and influence, I am accompanying the tour to Dhalipur Power Station 2023
g/1051
3. That I will be travelling and undertaking the tour on my own risk and responsibility and in case of any accident/mishap, I will not hold Tula's Institute responsible for the consequences.
4. That I will sought permission from my parent / guardian for going on the said tour.
5. That while on tour I will fully cooperate with tour incharge and abide by instructions given.
6. That I will strictly follow the guidance / rules/ regulations whatever college has framed for the successful conduct/completion of the said tour.
7. That I will not include/involve myself in any misbehaviour/ indiscipline / act amounting to indiscipline while I am on the said tour.
8. That if I will be found in any of the misconduct with faculty or fellow students, college may take any action against me and will be acceptable to me.


Signature of the student

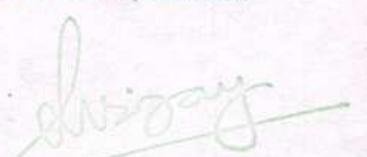
Dated: 08/05/2023


Signature of mentor

8/5/2023


Signature of HOD

Department of Mechanical Engineering
Tula's Institute, Dehradun


Director
Tula's Institute, Dehradun

Undertaking

I Kapil Kumar Pal S/o.D/o: Ram Kishor Pal

R/O: Hatkawali mobile no: 8171813313 Course: B.Tech

Semester: 8 Roll no: 190120104009 Session: 2022-23 Year: 4

Do hereby undertaking the following:

1. That I am a regular student of B.Tech 4th and on the rolls of the 190120104009 Department.
2. That I hereby declare that on my own will and wish and without any force and influence, I am accompanying the tour to Dhulipur power plant 9/05/2023
3. That I will be travelling and undertaking the tour on my own risk and responsibility and in case of any accident/mishap, i will not hold Tula's Institute responsible for the consequences.
4. That I will sought permission from my parent / guardian for going on the said tour.
5. That while on tour I will fully cooperate with tour incharge and abide by instructions given.
6. That I will strictly follow the guidance / rules/ regulations whatever college has framed for the successful conduct/completion of the said tour.
7. That I will not include/involve myself in any misbehaviour/ indiscipline / act amounting to indiscipline while I am on the said tour.
8. That if I will be found in any of the misconduct with faculty or fellow students, college may take any action against me and will be acceptable to me.

Kapil
Signature of the student

Dated: 08/05/2023

J.P.
Signature of mentor

8/5/2023

A.
Signature of HOD
Department of Civil Engineering
Tula's Institute, Dehradun

Abishek
Director
Tula's Institute, Dehradun

Tula's Institute, Dehradun
 INDUSTRIAL VISIT
 MECHANICAL ENGINEERING DEPARTMENT
 (09.05.2023)

S.No.	PROGRAMME/ YEAR	STUDENT NAME	SIGN	SIGN
1	B.TECH/ 1st	AJAY KUMAR SAH	Ajay	Ajay
2	B.TECH/ 1st	BIJAY SONAR	BJ	BJ
3	B.TECH/ 1st	BIPUL SINGH	Bipul	Bipul
4	B.TECH/ 1st	KARAN SINGH	Karan Singh	Karan Singh
5	B.TECH/ 1st	KUSHAGRA SHARMA	Kush	Kush
6	B.TECH/ 1st	SANDEEP ADHIKARI	Sandeep	Sandeep
7	B.TECH/ 1st	VINAY PRATAP SINGH	Vinay PT	Vinay PT
8	B.TECH/ 2 nd	ANUJ PRAKASH DIKSHIT	Anuj	Anuj
9	B.TECH/ 2 nd	PRIYANSHU SINGH BORA	Priyanshu	Priyanshu
10	B.TECH/ 2 nd	BIKRAM SINGH BHANDARI	Bikram	Bikram
11	B.TECH/ 2 nd	SUJAN TIMALSINA	Sujan	Sujan
12	B.TECH/ 2 nd	BIRENDRA KUMAR CHAUDHARY	Birendra	Birendra
13	B.TECH/ 2 nd	UDAY JAIN		
14	B.TECH/ 2 nd	ASHWANI DUBEY	ASWANI	ASWANI
15	B.TECH/ 2 nd	SHYAN SHAH	Shyan	Shyan
16	B.TECH/ 2 nd	RAVI RANJAN	Ravi	Ravi
17	B.TECH/ 2 nd	RANVIR KUMAR	Ranvir	Ranvir
18	B.TECH/ 3 rd	AASHISH KUMAR YADAV	Aashish	Aashish
19	B.TECH/ 3 rd	KHUSHI THAPA	Khushi	Khushi
20	B.TECH/ 3 rd	VISHNU	Vishnu	Vishnu
21	B.TECH/ 3 rd	MD AASIF JAVED	Asif	Asif
22	B.TECH/ 3 rd	DEBAYAN SARMA		
23	B.TECH/ 3 rd	KISHALAY DATTA		
24	B.TECH/ 3 rd	SAPTA PRADIP DATTA		
25	B.TECH/ 4 th	ADARSH KUMAR	Adarsh	Adarsh
26	B.TECH/ 4 th	ADITYA UTKARSH	Aditya	Aditya
27	B.TECH/ 4 th	AMAN DIXIT	Aman	Aman
28	B.TECH/ 4 th	ANUBHAV SRIVASTAV	Anubhav	Anubhav
29	B.TECH/ 4 th	AYUSH CHAND		
30	B.TECH/ 4 th	BEAUTY RAJ		
31	B.TECH/ 4 th	BIJOY SUTRADHAR		
32	B.TECH/ 4 th	GATLA SAIPRAKASH		
33	B.TECH/ 4 th	KAPIL KUMAR PAL	Kapil	Kapil

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34	B.TECH/ 4 th	MUJAMMIL KHAN	<i>Dark</i>	<i>MD</i>
35	B.TECH/ 4 th	NIKHIL SAXENA	<i>KP</i>	<i>Vikash</i>
36	B.TECH/ 4 th	PANKAJ KUMAR SHAH	<i>Suresh</i>	<i>Shah</i>
37	B.TECH/ 4 th	SHOAIB ALAM	<i>Suresh</i>	<i>Shah</i>
38	B.TECH/ 4 th	VIDESH KUMAR	<i>Vidhi</i>	<i>Vidhi</i>
39	B.TECH/ 4 th	AAKASH MICHAEL		
40	B.TECH/ 4 th	RITWIK SINGH		
41	DIPLOMA/ 2 nd	ROHIT SINGH		
42	DIPLOMA/ 2 nd	AMARNATH MANDAL	<i>Amarnath</i>	<i>Amarnath</i>
43	DIPLOMA/ 2 nd	VIKUL KUMAR		
44	DIPLOMA/ 2 nd	RAJ KUMAR	<i>Dev</i>	<i>Dev</i>
45	DIPLOMA/ 2 nd	DHEERAJ KUMAR PANDEY	<i>Dheeraj</i>	<i>Dheeraj</i>
46	DIPLOMA/ 2 nd	SAURABH SINGH NAYAL	<i>Ankit</i>	<i>Ankit</i>
47	DIPLOMA/ 3 rd	MOHD ANAS	<i>Anas</i>	<i>Anas</i>
48	DIPLOMA/ 3 rd	SAMEER AHMAD	<i>Sameer</i>	<i>Sameer</i>

Tulsi
Director
Tula's Institute, Dehradun

Cover Page

Name of Event	:	Industrial Visit to RUBICO
Date	:	19 April 2023
Venue	:	Rubico IT Private Limited, Haridwar
Organized by	:	Department of Computer Science and Engineering.
Event Coordinators	:	(Faculty and Student)
Faculty Coordinator	:	Ms. Akanksha Srivastav ,Mr Girish Singh Bisht
Student Coordinator	:	Abhishek Pal (VI-SEM)
Name of Experts/ Guests/ Speakers etc. (if any)	:	Ms. Gunjan Srivastav (QA Engineer) Mr. Umesh Verma (Lead software Engineer)
Total Registered Students	:	50
Total Student Participants	:	43
Total Registered Faculty	:	02
Total Faculty Participants	:	02
Total Registered External (if any) :	:	Nil
Total external participants (if any) :	:	Nil
Mode of Event	:	Offline



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Industrial Visit to RUBICO

Objective: The primary objective of the visit was to explore and engage with the exhibits and facilities at Rubico Haridwar. The other objectives are to

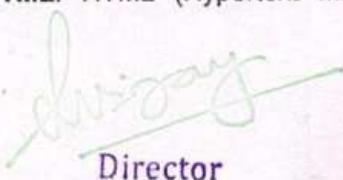
- Foster scientific curiosity.
- Promote hands-on learning experiences.
- Deepen understanding of various scientific concepts.
- Learn about Web development and mobile App development
- Inspire interdisciplinary collaboration.
- Inculcating innovation spirit among students.

Summary:

Rubico IT Private Limited was established in 2003 with a big vision to become the best “Information Technology” company in Uttarakhand, India. Tula’s Institute conducted an Industrial visit to Rubico IT Private Limited, Haridwar on 19 April 2023.

The industrial visit to Rubico IT Private Limited was a remarkable and enlightening experience for the B.Tech CSE students. The event commenced with the esteemed presence of Ms. Gunjan Srivastav (QA Engineer) and Mr. Umesh Verma (Lead software Engineer at Rubico) extended a warm welcome to everyone. He informed everyone about various various technology stack ie web development and mobile app development , Expert has to take session about –

- 1) JAVASCRIPT FRAMEWORKS AND LIBRARIES-** Javascript, the most popular language world-wide, is known for its flexibility and integrations with other frameworks and languages. By joining Rubico’s JS team, you will gain experience in manipulating API endpoint data using Angular, React, Vue.js, and other JS frameworks.
- 2) BACK-END DEVELOPMENT-** Backend developers write code that runs on servers, handling tasks such as processing user input, interacting with databases, and managing security. Backend developers work with databases to store and retrieve data. This involves designing database schemas, writing queries, and optimizing database performance. Common databases include MySQL, PostgreSQL, MongoDB, and SQLite.
- 3) FRONT-END DEVELOPMENT-** Frontend development involves building the user interface (UI) and user experience (UX) of web applications. **HTML:** HTML (Hypertext Mark-up



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Language) is the backbone of web development, providing the structure and content of web pages.

CSS: CSS (Cascading Style Sheets) is used to style HTML elements, defining their appearance, layout, and presentation on the screen.

JavaScript: JavaScript is a dynamic programming language that enables interactive features and behavior on web pages. It's used for tasks such as form validation, DOM manipulation, and handling user events.

- 4) MOBILE APP DEVELOPMENT-** The android market is an ever-increasing sea of users and developing android apps is a must-have skill to nurture. At Rubico, we have a team of developers who use Kotlin or Java with Android Studio to take full advantage of the processing power of the phone and create a more intuitive and customizable user experience. Native development also provides more flexibility when utilizing hardware specific features such as the camera, gyroscope, or the biometric scanner.

These presentations benefitted B. Tech CSE students by providing them with interdisciplinary insights, real-world applications of technology in environmental management, inspiration for innovation, awareness of ecological concerns, and expanded career prospects in sustainable technology development.

Outcomes:

The outcome of the Industrial Visit is:

- 1- Students gained interdisciplinary insights into the intersection of technology, environmental management, and nature research through lectures and presentations by experts.
- 2- The visit inspired students to innovate by showcasing real-world examples of technological solutions and promoting creativity and innovation through the Innovation Hub.
- 3- Students gained awareness of ecological concerns, such as environmental conservation and sustainable technology development, which broadened their perspectives and motivated them to consider the environmental impact of their future projects and careers.
- 4- Students had the opportunity to engage in hands-on learning experiences through exploring the Innovation Hub and various galleries at the Regional Science Center, which complemented their theoretical knowledge with practical applications.

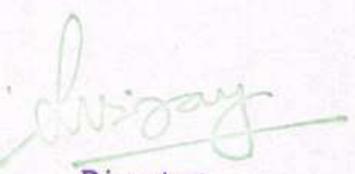


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Tula's Institute, Dehradun

Images- In Process



Fig-1



Jayant Singh
Director
Tula's Institute, Dehradun

Sample Case Studies

The Story of the Cellular Phone Brand Orange



By the end of 2000, the sun seemed to be setting on the Hutchison empire in India, or at least on its Orange¹ brand. Hong Kong-based cell phone operator Hutchison Max Telecom,² which owned the popular Orange brand in Mumbai (India) might soon have to give it up in favour of the city's second operator, BPL-France Telecom.

France Telecom, which acquired worldwide rights for the Orange brand in May 2000 from Vodafone³, was planning to enforce its ownership of the brand in India in a bid to cash in on the popularity of the brand.⁴ France Telecom was keen on using the brand via its joint venture with BPL⁵ in Mumbai. Said a France Telecom official, "We are likely to retain the brand for this part of the world. A final decision is likely to be taken early next year". Analysts felt that the Orange takeover could come as a severe blow to Hutchison in Mumbai, as the company could lose its leading position in this market. Hutchison would have to re-invest huge amounts in building up a new brand and giving it the same level of credibility that Orange enjoyed.

Analysts also felt that Hutchison, which had controlling stakes in cellular operators in other circles like Delhi, Calcutta and Gujarat, would have to develop a new brand for these circles.⁶ The company might be hit particularly hard in Delhi, the second-largest cellular market in the country. The Hutchison Group had initially planned to launch the Orange brand in Delhi, in May 2000, through its 49 per cent holding in Sterling Cellular. This was later delayed to October 2000.

It became clear that the Orange launch in Delhi had run into rough weather. Sudarshan Banerjee, CEO, Sterling Cellular, agreed that there was a delay in the Orange launch in the Capital, but attributed it to an expansion in its network. He Said, "We might launch Orange some time next year in Delhi." The Orange brand was also to be launched in Kolkata, where The Hutchison Group held 49 per cent in Usha Martin. But France Telecom, the foreign equity partner of Hutchison's Mumbai rival, BPL, seemed to be raising objections over the use of the Orange brand name outside the Mumbai circle. Sandip Das (Das), Chief Operating Officer (COO), Orange, claiming he was ignorant about France Telecom opposing the launch of the brand in other cities. He commented, "It was upto the equity partners in the New Delhi and Calcutta ventures to decide on whether to launch Orange or not."

[Signature]
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The Making of an Empire

Hutchison had a presence in the cellular market in India since 1995. In December 1999, Hutchison picked up a 49% stake in Delhi-based cellular service provider Sterling Cellular. Since then, another 2% seemed to have been acquired by a Hutchison associate company.⁷ The rest was held by the Essar group, which owned almost the entire stake in Aircell Digilink, the cellular license holder for Haryana, Rajasthan and Eastern UP. In 1999, when the Essar group approached financial services company GE Capital Services for a loan of Rs 650, crore to pump into its cellular operations, it could manage to get the money only after the loan was guaranteed by its partner, Hutchison. Analysts felt that Essar had already agreed to take the backseat in the venture. In early 2000, when Business World contacted Asim Ghosh (Ghosh), Managing Director and CEO, Hutchison Max Telecom (India), he refused to comment on whether the Ruias would let Hutchison be the dominant partner in the cellphone services relationship.

But an Essar official commented, "Under the arrangement, Essar will not pull out of the telecom ventures for now, but Hutchison will call the shots. Essar will end up playing only a passive role in the arrangement." Essar officials held that the company had entered into a tacit agreement with Hutchison that Essar would exit from the telecom business in favor of the multinational when these telecom companies would go for an initial public offer (IPO) in the not-too-distant future.

Hutchison would first acquire half of Essar's stake in these companies and then Essar would go to the primary market with an 'offer for sale' to offload the rest of its stake to the general public. That would leave Hutchison as the majority owner of the cellular telephone companies. However, foreign companies weren't allowed to hold more than 49% stake in Indian telecom outfits and Hutchison already owned 49% of Sterling. Under such circumstances, Hutchison would not be in a position to acquire more shares and majority control. But, Hutchison had circumvented the 49% limits way back in 1998 itself.

In November 1999, it sold its 44.8% stake in Orange to Mannesmann. When Vodafone acquired Mannesmann, Hutchison got 5% of Vodafone's share capital. In March 2000, the company sold 1.5% of these shares for \$4.7 billion (Rs 20,445 crore). It was part of this money that Hutchison was using to fund its expansion in India. All the other Indian telecom service providers, put together, did not have that kind of ready cash.

Mobile Mania

By the end of 2000, mergers, acquisitions and alliances had become the order of the day in the cellular phone market. Commented Atul Chopra, Managing Director, New Delhi based investment bank, Asia Pacific Capital, who was involved in some of the telecom deals, "You can either acquire or get acquired. There is no third option."

In March 2000, Business World wrote, "Once the dust settles down in less than 18 months, the number of players in the business will come down from 22 to five or six". The probable long-term players could be Bharti Enterprises, BPL, Hutchison Whampoa, Reliance and the Tata-Birla-AT&T combine. MTNL could also be a significant player with its launch of mobile

services under the brand name Dolphin in Delhi and Mumbai. Analysts felt that with 1.58 million subscribers (as compared to 26 million fixed lines), and less than 0.4% of the world's 400 million mobile users, there should not be a scramble for the market.

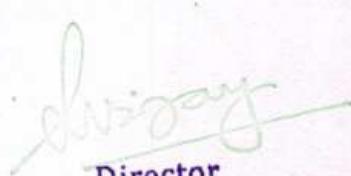
"The entire mobile business in India has been notionally valued by investment bankers at \$ 4.5 billion (INR 22,500 crore) which is nowhere near the valuation of say, the country's software business. So why this madness?" asked one. Mobile operators hoped that India would follow the rest of the world in opting for more cellular phones. The consistently falling call rates and a number of new services that mobile operators were offering was expected to drive the boom in the market. The impact of some of these developments was already being felt.

The mobile market was expected to grow at a phenomenal 66% in 2000 and add one million new subscribers to touch 2.7 million subscribers by April 2001. In 2000, the mobile market was worth Rs. 2000 crore in terms of revenue and was expected to cross Rs. 5,000 crore by 2002. The mobile market was also expected to become huge in the near future and waiting to carve out their share of this pie would be a handful of players. Once the foreign companies were allowed to hold 100% stakes in Indian mobile firms, foreign majors with deep pockets would expand the market much faster.

The major players in the cellular phone market, other than Hutchison Max Telecom, were Bharti Telecom, Essar Teleholdings, BPL Mobile/BPL Cellular, RPG Cellular/Cellcom, Spice Cell/Spice Communications, Fascel/Celforce and Birla Tata AT&T.

TABLE I
MAJOR PLAYERS IN THE CELLULAR MARKET

Companies	Stakeholders	%
Bharti Cellular	Bharti Televentures	56
	Bharti Telecom	44
Bharti Mobile	Bharti Televentures	74
	Telia	26
Sterling Cellular (Essar Cellphone)	Essar	51
	Hutchison Max	49
BPL Mobile	France Telecom	26
	BPL Cellular Holdings	74
BPL Cellular	BPL Cellular Holdings	51
	AT&T	49
RPG Cellular	RPG Group	68
	Vodafone	20
	CellNet	11
	Others	1
RPG Cellcom	RPG Group	51
	Vodafone	49
Spice Cell	Modicorp	45
	Distacom	43
	AIG	12
Fascel	Hinduja Group	40
	Kotak Mahindra Ltd.	11
	Hutchison Max	49
Birla AT&T	Aditya Birla Group	51
	AT&T	49



Dr. T. S. Venkateswaran
Director
Tula's Institute, Dehradun

Tata Cellular	Tata Group Bell Canada International AIG	64 27.4 8.6
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Welcome Orange

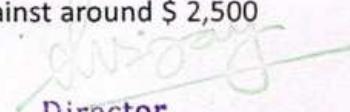
In early 2000, a bright orange bloom over cities like Mumbai, Delhi and Kolkata was giving sleepless nights to Sunil Mittal (Mittal)⁸ and Rajeev Chandrashekhar (Chandrasekhar)⁹. In February 2000, Hutchison Max Telecom introduced Orange in India. The brand "Max Touch"¹⁰ was replaced by Orange. This was for the first time that a globally recognised cellular service brand was available in India. Said Ghosh, "What that means to our subscribers is that they will now benefit from the technology advantages that Orange has. Orange is refreshing, honest, straightforward, innovative and friendly. In continuum, we will incorporate these brand values in our services at an accelerated pace".

The change in the brand logo and culture was reinforced with a fresh round of campaigns. The mass media plan included print, outdoor and cable television. The brand was positioned as one which was not for the elite or techno-savvy geeks alone but for down-to-earth, 'real' world people who wanted to be spoken to honestly and directly. Commented Ghosh, "Orange had inspired Max Touch ever since the inception of Max Touch. Orange is the logical extension and replacement of the brand Max Touch which had always imbibed Orange values."

The earlier uniform of a formal black trouser-suit with a scarf was replaced with an orange shirt and black skirt with the supervisors having the option of wearing a black jacket with an orange handkerchief. The men wore a white shirt, black trousers and an orange printed tie. Officials of Hutchison Max Telecom felt that France Telecom's purchase of Orange would not have any immediate impact on the Orange brand in India. Hutchison Max Telecom had already acquired the rights to use the Orange brand in India and so the question of 'cracks in Orange' did not arise.

Again, under the National Telecom Policy, BPL would not be able to utilize the Orange brand name in Mumbai.¹¹ Analysts felt that there would not be any major conflict of interest in use of the Orange brand in Mumbai. Said one, "I don't think that BPL or France Telecom would be interested in getting into that issue at this stage. May be never. Unlike some other telecom companies in India, BPL wanted to promote its own brand and not of a foreign partner. Suddenly, I don't see any reason for them to change that stand now."

Analysts also felt that the primary focus of France Telecom, through Orange would be to consolidate operations in Europe. Commented one, "What they (France Telecom) decide to do with their non-European properties or businesses is not clear as yet. France Telecom has been lying low in India and Hutchison, on the other hand, has been expanding its operations with a great deal of interest. Hutchison might, at a later stage, plan to sell off its Asian properties to a separately spun-off and publicly-traded "New Orange" if they fetch the company as much as it has in Europe--around \$ 7,000 per subscriber against around \$ 2,500 per subscriber Hutchison itself has spent on expansion."


Director
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Orange is Squeezed

In May 2000, when France Telecom acquired Orange, two top officials from Orange met senior Hutchison India officials in Israel at a convention. They made an offer to pick up a significant stake in Hutchison's India operations, which was by then planning to launch the Orange brand in New Delhi after having made a big splash in the lucrative Mumbai circle. The offer was made a second time shortly thereafter, but Hutchison India officials turned it down, saying that they were in no mood to sell, and that they would eventually effect a merger of all the circles by taking their Indian partners along.

After the offer was turned down, a team of Orange officials visited India and said that the Orange brand licensing agreements needed to be reworked and a higher royalty would now have to be paid by Hutchison for use of the Orange brand. Hutchison officials seemed to have rejected a higher royalty payout. They said they enjoyed the rights for Mumbai and also had the option to launch the Orange brand in some "other properties" in India. It was pointed out that the only way out could be to go in for arbitration. However, nothing has moved on this front so far.

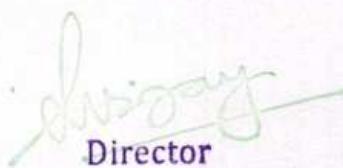
In late 2000, in a significant departure from their earlier stand, Hutchison officials hinted that Orange was not a brand they would die for. They also hinted that Orange might not be the brand they would eventually go ahead with. Analysts also felt that it might not make sense to push a brand to which they could not claim all-India rights. In late 2000, in response to The Economic Times' query on whether Orange representatives had negotiated a stake buy-out with Hutchison, a Hutchison spokesperson said, "There has been a great deal of speculation about Orange and Hutchison, since Hutchison sold its stake in Orange to Mannesmann over a year ago.

There has also been speculation and rumours at Orange branded businesses. Yes, there have been representatives from Orange in India. We have nothing further to add at this time." In early 2001, there was speculation that Hutchison might withdraw Orange from all parts of India, including Mumbai, replacing it with a new global brand by the end of 2001.

There was also speculation that BPL might use Orange in Mumbai. However, BPL decided not to use the Orange brand in Mumbai, even after the current user Hutchison choice to give it up. Said Chandrashekhar, "BPL is a very strong brand there (Mumbai) and there is no question of our replacing it with any another brand.

Our philosophy is clear: we do nothing, which doesn't enhance value for us." Analysts also felt that BPL was a fairly strong brand and replacing it in Mumbai or anywhere else in India, with any other brand would make little sense for the company. "I don't think BPL should be very keen on Orange. When its own brand is so reputable, why should it pay royalty to use the brand? For the rest of India also, BPL may not like to spend a lot on promoting the new brand," said a Mumbai based analyst.

But Not Hutchison



Dr. Jitendra Singh
Director
Tula's Institute, Dehradun

Hutchison's honeymoon with the Orange brand in India could soon be over but it would still remain a dominant player in the cellular phone market. In December 2000, the company announced that it was planning to consolidate its cellular telephone assets in India and list them within a year or eighteen months. In early 2001, oblivious of the threat looming large over its Orange brand, Hutchison was gearing up for a new competitor, MTNL in the aggressive Mumbai market. Said Das, "The company plans to launch a slew of marketing initiatives to promote the Orange brand in the near future." To support the print campaign, the company planned to launch an ad campaign and ground promotions. Mr. Das said, "Competition may come and go. We are not worried about new rivals. We will be exploring new marketing options this year like any other year." In Feb 2001, Orange announced significant cuts in their tariffs. As per their new standard tariff plan, the outgoing and incoming calls would cost Rs. 2.80 and Rs. 1.60 respectively, as against Rs. 4 earlier.

For Hutchison, the road ahead was tough and future uncertain. Cut-throat competition, its squabbles with France Telecom over royalty payments and other issues had begun to squeeze out Orange's vigor. The million-dollar question was, whether Orange would survive and bounce back.

Question

1. What were the key challenges faced by Hutchison Max Telecom's Orange brand in India, particularly regarding its brand ownership and competition with other telecom companies?
2. How did the acquisition of the Orange brand by France Telecom impact Hutchison's operations and branding strategy in India?
3. What strategic moves did Hutchison Max Telecom undertake to maintain its position in the Indian cellular market amidst challenges from France Telecom and other competitors?
4. What factors influenced Hutchison Max Telecom's decision-making regarding the use of the Orange brand in different Indian cities, particularly in Mumbai?
5. How did the regulatory environment and market dynamics in India shape the branding and operational strategies of Hutchison Max Telecom's Orange brand?



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Reference of the Superscripts

- 1] Orange was formed in the UK in 1989, with the launch of Hutchison Telecom to target the growing telecommunications Industry.
- 2] Hutchison Max Telecom was a part of the Hutchison Whampoa group. Hutchison Whampoa Limited (HWL) was a Hong Kong based Industrial Conglomerate, and had a presence in telecommunications, property development and holdings, retail, manufacturing and services and energy, infrastructure, finance and investment. Hutchison Max Telecom was the largest cellular provider in India, covering Mumbai, Kolkata and Gujarat. In April 2000, it had a subscriber base of 4.55 lakhs, compared to BPL's 3.5 lakhs and Bharti Enterprises' 3.2 Lakhs.
- 3] A major cellular operator in the UK.
- 4] Orange had gone through changes of control in recent past. Till 1999, Hutchison retained a majority stake in the company. This stake was sold to Mannesmann of Germany in late 1999, who eventually acquired all of the shares in the company. In early 2000, the European Commission approved Vodafone's purchase of Mannesmann with the proviso that they sell Orange. The European Commission did not allow Vodafone to own two competing phone companies .By the end of May 2000, Vodafone sold Orange to France Telecom. However, through an earlier agreement with Vodafone, Hutchison Max acquired the license to use the Orange brand in India. Hutchison Max would pay a royalty to the owners of the Orange brand.
- 5] France Telecom had a direct 26 per cent holding in cellular operator BPL Mobile.
- 6] In December 1999, Hutchison picked up 49% stake in Delhi's Sterling Cellular (the rest was held by Essar Group) and an equal stake in Calcutta's Usha Martin Telecom. In late 2000, Hutchison also picked up a stake in Fascel, the Hinduja promoted mobile services company in Gujarat through an undisclosed equity partnership.
- 7] Government guidelines prevented a foreign operator from owning more than 49% of a telecom company in the country.
- 8] Chairman, Bharti Telecom.
- 9] Chairman and CEO, BPL Mobile Communications.
- 10] Prior to the launch of Orange, Hutchison Max Telecom operated in India under the brand name, Max Touch.
- 11] The National Telecom Policy did not allow an operator to take equity stakes or 'interests' in two mobile companies in a single mobile circle.



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Sample Power Point Presentation

Computer Structure and Architecture

By

Dr. Sanjeev Kumar

Professor

Department of Computer Science & Engineering

Tula's Institute, Dehradun



Tula's Institute, Dehradun



Contents

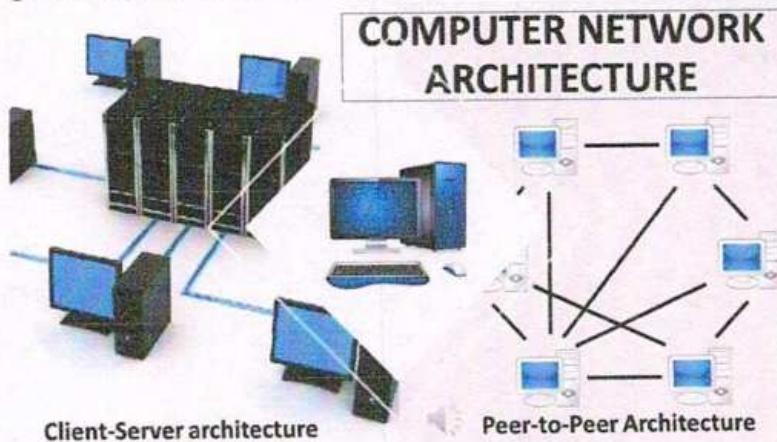
- Introduction of Computer Structure and Architecture
- Peer-To-Peer network
- Client/Server network
- Advantage / Disadvantage of Peer-To-Peer network
- Advantage / Disadvantage of Client/Server network

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Director
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Computer Structure and Architecture

Network architecture is the design of a computer network. It is a framework for the specification of a network's physical components and their functional organization and configuration, its operational principles and procedures, as well as communication protocols used.

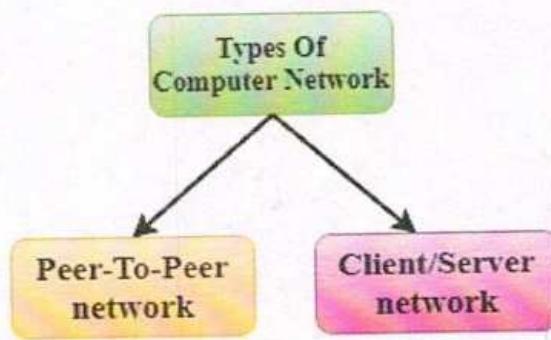


Computer Network Architecture

Computer Network Architecture is defined as the physical and logical design of the software, hardware, protocols, and media of the transmission of data. Simply we can say that how computers are organized and how tasks are allocated to the computer.

The two types of network architectures are used:

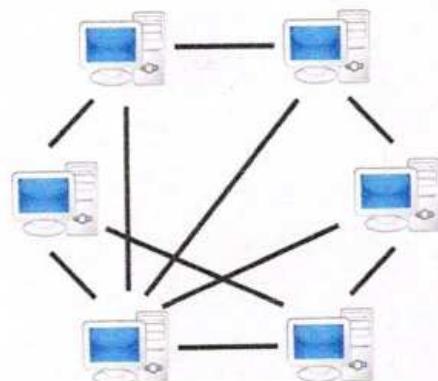
- Peer-To-Peer network
- Client/Server network





Peer-To-Peer network

- Peer-To-Peer network is a network in which all the computers are linked together with equal privilege and responsibilities for processing the data.
- Peer-To-Peer network is useful for small environments, usually up to 10 computers.



Peer-To-Peer network

- Peer-To-Peer network has no dedicated server.
- Special permissions are assigned to each computer for sharing the resources, but this can lead to a problem if the computer with the resource is down.





Advantages Of Peer-To-Peer Network

- It is less costly as it does not contain any dedicated server.
- If one computer stops working but, other computers will not stop working.
- It is easy to set up and maintain as each computer manages itself.

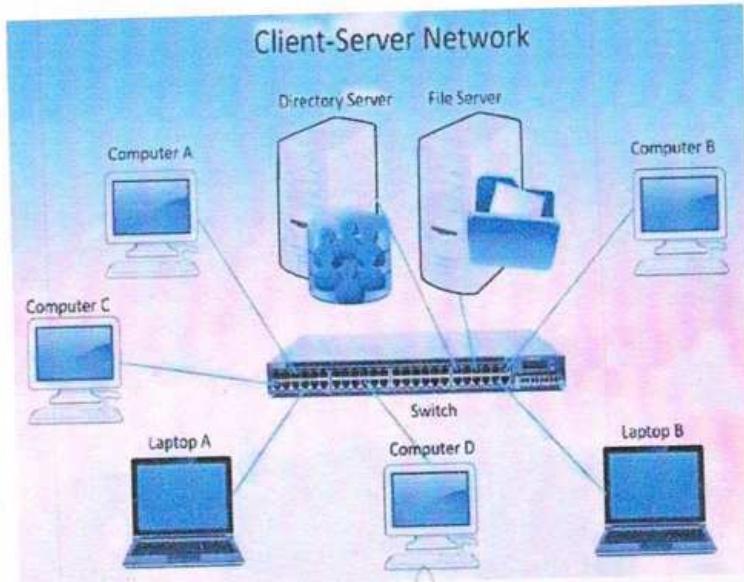
Disadvantages Of Peer-To-Peer Network

- In the case of Peer-To-Peer network, it does not contain the centralized system. Therefore, it cannot back up the data as the data is different in different locations.
- It has a security issue as the device is managed itself.



Client/Server Network

- Client/Server network is a network model designed for the end users called clients, to access the resources such as songs, video, etc. from a central computer known as Server.
- The central controller is known as a **server** while all other computers in the network are called **clients**.





Client/Server Network

- A server performs all the major operations such as security and network management.
- A server is responsible for managing all the resources such as files, directories, printer, etc.
- All the clients communicate with each other through a server. For example, if client1 wants to send some data to client 2, then it first sends the request to the server for the permission. The server sends the response to the client 1 to initiate its communication with the client 2.



Advantages Of Client Server Architecture

- A Client/Server network contains the centralized system. Therefore we can back up the data easily.
- A Client/Server network has a dedicated server that improves the overall performance of the whole system.
- Security is better in Client/Server network as a single server administers the shared resources.
- It also increases the speed of the sharing resources.



Disadvantages Of Client Server Architecture

- Client/Server network is expensive as it requires the server with large memory.
- A server has a Network Operating System(NOS) to provide the resources to the clients, but the cost of NOS is very high.
- It requires a dedicated network administrator to manage all the resources.

Thanks



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Sample Question Bank

40	11, 12, 15
50	16, 14
60	16
70	16, 17
80	11, 12, 13, 14
90	13, 15
00	11, 12

5. Attempt any two questions : [10×2=20]

- (a) What are Schemas? Discuss various Schemas used in Data warehouse.

(b) Differentiate between OLTP and OLAP.

(c) A data warehouse consists of the four dimensions date, location and game and a measure charge. Charge is the fare that a spectator pays when watching a game on a given date. Spectator may be students, adults or seniors with each category having its own charge rate. Draw a Star Schema Diagram for the data warehouse. Show the Fact and Dimension tables and mark the primary and foreign keys.

for NaOH and H_2O : $\sum m_i = \text{molar mass}$

TCS-703/TIT-702/1560

(4)

D. S. Joshi
Director
Tula's Institute, Dehradun

Paper Code & Roll No. to be filled in your Answer Book

Odd Semester Examination-2016

B.Tech (SEMESTER - VII)

DATA MINING AND DATA WAREHOUSE

[Time : 3 Hours]

[Maximum Marks :100]

Note : Attempt all questions.

1. Attempt any four questions :

$$[5 \times 4 = 20]$$

- (a) What is data mining? Explain with the help of an example.
 - (b) What are technologies used in data mining?
 - (c) What is the difference between verification and discovery?
 - (d) What do you mean by decision trees? Explain.
 - (e) Explain the data cleaning process in data preprocessing.

TCS-703/TIT-702/1560

617

[P.T.O.]

2. Attempt any four questions : [5×4=20]

- (a) Describe the confidence and support with respect to association rule mining.
- (b) Define an association rule for a customer X whose age must be between 19 and 24 and X must be a student by occupation implies that X buys LCD.
- (c) What is market basket analysis? How it is useful in association rule mining?
- (d) What is data mart? Differentiate between dependent and independent data mart.
- (e) What is data warehouse? What are the goals of a data warehouse?

3. Attempt any four questions : [5×4=20]

- (a) What is data classification? How it is different than prediction?
- (b) What are data classification rules and how is decision trees related to them?
- (c) What is Bayesian classification? How it classifies the input data?

(d) Explain concept hierarchy generation.

(e) What is supervised and unsupervised learning? Why clustering is known as unsupervised learning?

4. Attempt any two questions : [10×2=20]

(a) What is OLAP? Explain the following operation on data warehouse:

- (i) Roll-up
- (ii) Drill-down
- (iii) Slice and Dice
- (iv) Pivot

(b) How does Clustering differ from Classification?

(c) Apply the Apriori algorithm on the following data set and find the maximum frequent item set having support 20% or more are frequent item set. Show two association rules that have a confidence 70% or greater.

Trans ID	Item Purchased Sold
10	I1, I2, I4
20	I1, I7
30	I7, I5

TCS-703/TIT-702/1560 (3)

[P.T.O.]

unsupervised type of learning

5. What do you mean by association rules, for what purpose it is being used? Explain with example

Attempt any Two (2×10=20)

1. What are the different classification techniques? Discuss issues regarding classification and prediction.
2. Give the fundamentals of Genetic Algorithm. Highlight the steps involved. Also give the advantages and limitations of Genetic Algorithm.
3. How is data prepared for classification and prediction. Also give the comparison of classification and prediction methods.

Attempt any Two (2×10=20)

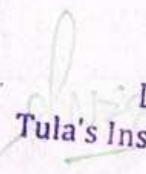
1. Find and write the basic difference between clustering and classification. Describe the density-based clustering method based on connected regions with sufficiently high density (DBSCAN).
2. Explain the type of data that often occur in cluster analysis and briefly explain how to preprocess that data for clustering?
3. Write short notes on:
 - i) CLIQUE
 - ii) STING

Attempt any

1. Define the data warehousing with suitable example. Why we need a separate data warehouse? Differentiate between OLAP and OLTP.

2. Describe the MOLAP and ROLAP in brief. Write their contribution in building of data warehouse.
 - (i) Briefly describe the multidimensional data model.
 - (ii) Describe data cubes with suitable example.

—X—


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Odd Semester Examination 2017-18**B.TECH (SEMESTER-VII)****DATA WAREHOUSING AND MINING**

Time: 03:00 Hours

Max. Marks : 100

Note: Attempt all questions.

1. Attempt any Four. All questions carry equal marks. (5×4=20)
1. Describe the characteristics of data warehouse? How is the concept of relational view related to data warehouse?
 2. Distinguish between Object-oriented Database and Object-Relational Databases.
 3. How are association rules generated from large databases?
 4. What do you mean by concept hierarchy?
 5. Define Star Schema, Snowflake Schema and Fact-constellation Schema for data warehouse. With example.
2. Attempt any Four. All questions carry equal marks. (5×4=20)
1. Describe benefits and drawbacks of source driven architecture for gathering of data at a data warehouse as compared to a destination driven architecture.
 2. With the schematic diagram, discuss the architecture of typical data mining system.
 3. What is online transaction processing (OLTP)? Describe the evolution of OLTP. What are the critical features of OLTP features.
 4. State 12 rules for evaluating OLAP products developed by C.F Codd.
 5. Briefly explain various steps of Data mining Process.
3. Attempt any Four. All questions carry equal marks. (5×4=20)
1. Describe in detail about data mining functionalities.
 2. Describe issues regarding preprocessing the data for classification and prediction.

3. A multiple dimensional view can be implemented by a multidimensional (MOLAP) or a relational (ROLAP) or a hybrid database technique (HOLAP). Describe.
4. How artificial intelligence is used in Database Warehousing? Explain with suitable example.
5. Briefly explain Mining of spatial Databases and mining of Text databases

4 Attempt any two. All questions carry equal marks. (10×2=20)

1. What is data warehouse? Explain the data warehouse architecture.
2. Describe the following clustering techniques:
 - (i) CLARA
 - (ii) BIRCH
 - (iii) OPTICS
3. What is clustering analysis? What is supervised and unsupervised learning? Why clustering is known as unsupervised learning?

5 Attempt any two. All questions carry equal marks. (10×2=20)

1. Given a set of transaction, find rules that will predict the occurrence of an item based on the occurrences of other items in the transaction. The value of support is 40% and confidence is 70%

TID	Items
1	Bread, milk
2	Bread, Diaper, Beer, Eggs
3	Milk, Diaper, Beer, Coke
4	Bread, Milk, Diaper, Beer
5	Bread, Milk, Diaper, Coke

Apply Apriori algorithm to find frequent item pairs and association rules.

2. Explain the steps in Knowledge discovery. Explain the data pre-processing techniques in detail.
3. What is time series analysis? Write short notes on DB miner. Explain the applications of data mining in credit card fraud detection.

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CourseName:Data Structures

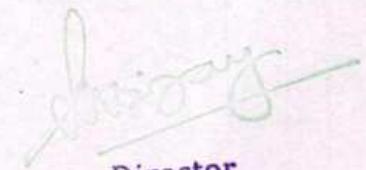
CourseOutcomes(CO):

1. Discuss the C language features and analyze the differences between recursive and iterative programming structures
2. Analyze the role of data structures in structuring and manipulating data and implement them using array or list representation
3. Discuss the properties, operations, applications, strengths and weaknesses of the different data structures and their effect on algorithms
4. Implement abstract data type for Tree non-List linear data structure and apply them to problem solutions.
5. Discuss the file structures and storage management for efficient access of data

Question Paper
Total Duration (H:M): 3:00
Course: Data Structures
Maximum Marks: 100

Note:Attempt all questions.

Q. No	Questions	Marks	CO	BL
1a)	When doubly Linked list can be represented as a Circular linked list?	4	CO3	L2
1b)	Difference between Linear data Structure and non-linear data structure?	6	CO4	L4
1c)	Write all the steps to convert a general tree into a binary tree with neat labeled flow diagram.	10	CO4	L2
2a)	You are given an unsorted array $A = A[1 \dots n]$ containing n distinct integers. Design an algorithm that outputs the smallest k elements in the array A . The running time of your algorithm should be $O(n + k \log n)$. Give pseudocode and discuss running time.	4	CO2	L5
2b)	What are enqueue and dequeue operations?	6	CO3	L2
2c)	Given Infix Expression: $((H * (((A + ((B + C) * D)) * F) * G) * E) + J)$; convert it into post fix and prefix notation?	10	CO1	L5

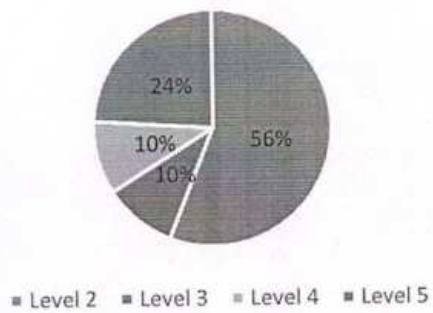


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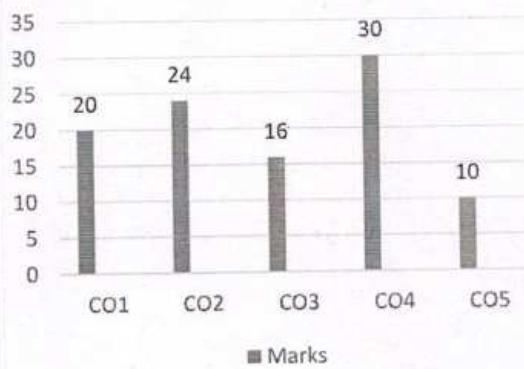
3a)	Prove that the maximum number of edges that a graph with n Vertices is $n*(n-1)/2$.	4	CO4	L4
3b)	How the queue is implemented by linked list and discuss all the steps and algorithms for insert and delete from the queue is implemented by linked list.	6	CO3	L2
3c)	a. List out the steps involved in deleting a node from a binary search tree. b. Write the advantages of threaded binary trees.	10	CO2	L3
4a)	Define a heap. How can it be used to represent a priority queue?	4	CO5	L2
4b)	Define sorting and what do you mean by internal and external sorting?	6	CO5	L2
4c)	How is the insertion sort done with the array and also write a pseudocode for insertion sort?	10	CO1	L2
5a)	Disadvantages of Array over Linked List and also mention disadvantages of linked list over array?	4	CO2	L5
5b)	Difference between Stack queue and linked list and explain how do you test for an empty stack?	6	CO2	L5
5c)	<p>Given the following AVL Tree:</p> <p>(a) Draw the resulting BST after 5 is removed, but before any rebalancing takes place. Label each node in the resulting tree with its balance factor. Replace a node with both children using an appropriate value from the node's left child.</p> <p>(b) Now rebalance the tree that results from (a). Draw a new tree for each rotation that occurs when rebalancing the AVL Tree (you only need to draw one tree that results from an RL or LR rotation). You do not need to label these trees with balance factors.</p>	10	CO4	L2

Shivay
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Tula's Institute, Dehradun

BLOOM'S LEVEL WISE
MARKS DISTRIBUTION



COURSE OUTCOMEWISE
MARKS DISTRIBUTION

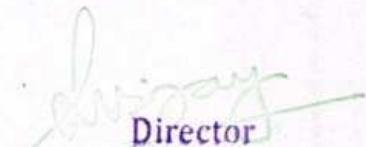


BL—Bloom's Taxonomy Levels(1-Remembering,2-Understanding,3

Analyzing,5 –Evaluating,6-Creating)

CO—Course Outcomes

—Applying,4—


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Course Name: Artificial Intelligence

Course Outcomes (CO): At the end of the course the students should be able to:

1. Acquire advanced Data Analysis skills.
2. Stay Industry relevant and grow in your career.
3. Create AI/ML solutions for various business problems.
4. Build and deploy production grade AI/ML applications.
5. Apply AI/ML methods, techniques and tools immediately

Total duration(H:M): 03:00

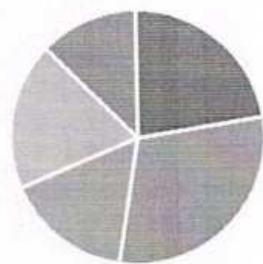
Course: Artificial Intelligence

Maximum Marks:100

Q. No.	Questions	Marks	CO	PO	BL
1a.	Explain intelligence and artificial intelligence. How do they distinguish?	4	CO2	1	1
1b.	Explain knowledge acquisition in artificial intelligence.	6	CO4	3	3
1c.	For the set $S = \{ P \vee Q, \neg Q \vee R, \neg P \vee Q, \neg R \}$ i. Derive an empty clause from S by resolution. ii. Show that $(\exists z) (\forall x) [p(x) \rightarrow Q(z)]$ and $(\exists z) [(\exists x) p(x) \rightarrow Q(z)]$ are equivalent.	10	CO5	2	4
2a.	What is the environment in AI? Explain following. i. Fully Observable vs Partially Observable ii. Deterministic vs Stochastic iii. Competitive vs Collaborative	4	CO1	5	2
2b.	Explain the following with a diagram. i. Goal-Based Agents ii. Utility-Based Agents iii. Learning Agent	6	CO3	4	2
2c.	What is a heuristic function? Explain the best first search with an example.	10	CO5	2	3
3a.	Write the difference between informed and uninformed search.	4	CO2	3	3
3b.	What is A* search? Perform A* search on the graph given below.	6	CO3	5	4
3c.	What is state space? Explain the state space search graph and state space trees with examples.	10	CO4	1	2
4a.	Write the difference Uniform cost search and Breath first search.	4	CO1	3	4

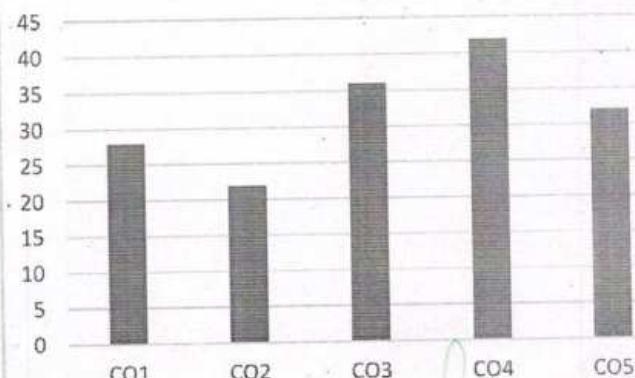
4b.	Explain in detail Bayesian theory and its use in AI. Define the like-hood ratio.	6	CO5	4	1
4c.	Determine whether the following PL formula is (a) Satisfiable (b) Tautology (c) Contingency i. $(p \wedge q) \rightarrow r \vee \neg q$ ii. $\neg p \wedge (p \vee q) \rightarrow q$ iii. $q \rightarrow \neg q \wedge (p \vee q)$	10	CO2	2	5
5a.	What is resolution in principle in propositional logic, explain?	4	CO3	4	1
5b.	What is probability reasoning? Why it is required in AI applications.	6	CO1	5	4
5c.	How is resolution in first-order predicate logic different from that of propositional performed? What are unification Algorithms & why it is required?	10	CO4	1	2
6a.	Write the difference between supervised and unsupervised learning.	4	CO2	3	4
6b.	What are Bayesian networks? Explain its importance with the help of an example.	6	CO4	4	1
6c.	Explain decision tree learning with a suitable example.	10	CO3	2	1
7a.	Write applications of expert systems.	4	CO1	5	2
7b.	Explain following. i. Perceptron Learning ii. Delta Learning	6	CO5	2	1
7c.	What is an expert system? Explain different parts of an expert system.	10	CO1	3	2
8a.	What artificial neural network? Write applications of it.	4	CO3	1	2
8b.	What is a genetic algorithm? Explain genetic algorithm operators and parameters.	6	CO3	5	3
8c.	Represent the following sentences in symbol logic. i. All students like good teachers. ii. All that glitters is not gold. iii. Fruits and vegetables are delicious. iv. God helps those who help themselves. v. Jack and Jill went up to the hills.	10	CO4	4	5

Bloom's Level wise Marks Distribution



■ LEVEL 1 ■ LEVEL 2 ■ LEVEL 3
■ LEVEL 4 ■ LEVEL 5

Course Outcomes wise Marks Distribution



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MCQ and MSQ

Department of Computer Science & Engineering

Course Name: Operating System

UNIT 1: INTORDUCTION TO OS

1. Define operating system and list the basic services provided by operating system.
2. Differentiate among the following types of OS by defining their essential properties.
 - a) Time sharing system
 - b) Parallel system
 - c) Distributed system
 - d) Real time system
3. Explain the essential properties of
 - a) Batch System
 - b) Time sharing
 - c) Real time
 - d) Parallel
 - e) Distributed
 - f) Handheld
 - g) Embedded
 - h) Smart Card O.S
4. Differentiate among the following types of OS by defining their essential properties:
 - a) Time Sharing System
 - b) Parallel System
 - c) Simple batch System
 - d) Real time System
5. Explain batch system and Multiprogrammed System in detail.

Signature
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Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission:

- To promote intellectual and skilled human capital generation employment and entrepreneurship.
- To be educational centre of excellence of multi ethnicity and diversity.
- To establish as technology driven teaching learning institution.
- To provide world class platform for research and innovation.
- To inculcate social, environmental, heritage values.



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6. Explain the terms :

- a) Real time System
- b) Distributed System

7. Explain the terms :

- a) Parallel System
- b) Batch System

8. Explain O.S as extended machine in detail.

9. Explain OS as resources manager

10. Explain essential features of following structure of O.S

- a) Monolithic System
- b) Layered Systems
- c) Micro Kernels
- d) Client Server Model
- e) Virtual Machines
- f) Exokernels

11. What are the types of System calls?

12. List any four process management system call.

13. Define user mode and kernel mode. Why two modes are required?

14. What is the O.S features required for multiprogramming

15. What are the advantage and disadvantage of multiprocessor system?

16. Describe the difference between symmetric and asymmetric multiprocessing?

17. Distinguish between the client-server and peer-to-peer models of distributed system

18. What difference is between loosely coupled and tightly coupled system.

19. What are advantages of distributed System?

20. What are the requirements of hard real time and soft real time system?

21. What are the drawbacks of monolithic system?

22. What are the advantages of layered structure over monolithic structure?

Vision

- To emerge as an academic centre producing world class professionals promoting innovation and research.

Mission:

- To promote intellectual and skilled human capital generation employment and entrepreneurship.
- To be educational centre of excellence of multi ethnicity and diversity.
- To establish as technology driven teaching learning institution.
- To provide world class platform for research and innovation.
- To inculcate social, environmental, heritage values.



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1) A local telephone network is an example of a _____ network

- a) Packet switched
- b) Circuit switched
- c) both of the mentioned
- d) none of the mentioned

[View Answer](#)

Answer: a

Explanation: None.

2) Most packet switches use this principle

- a) Stop and wait
- b) Store and forward
- c) Both of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: The packet switch will not transmit the first bit to outbound link until it receives the entire packet.

3) If there are N routers from source to destination, total end to end delay in sending packet P($L \rightarrow$ number of bits in the packet $R \rightarrow$ transmission rate)

- a) N
- b) $(N \cdot L)/R$
- c) $(2N \cdot L)/R$
- d) L/R

[View Answer](#)

Answer: b

Explanation: None.

4) Method(s) to move data through a network of links and switches

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Both a and b

[View Answer](#)

Answer: d

Explanation: None.

5) The resources needed for communication between end systems are reserved for the duration of session between end systems in _____

- a) Packet switching
- b) Circuit switching
- c) Line switching
- d) Frequency switching

[View Answer](#)

Answer: b

Explanation: None.

6) As the resources are reserved between two communicating end systems in circuit switching, this is achieved

- a) authentication
- b) guaranteed constant rate
- c) reliability
- d) store and forward

[View Answer](#)

Answer: b

Explanation: None.

7) In _____ resources are allocated on demand.

- a) packet switching
- b) circuit switching
- c) line switching
- d) frequency switching

[View Answer](#)

Answer: a

Explanation: In packet switching there is no reservation.

Computer Networks Questions & Answers – IPv4

This set of Computer Networks Questions & Answers focuses on "IPv4".

1. Which of the following is not applicable for IP?

- a) Error reporting
- b) Handle addressing conventions
- c) Datagram format
- d) Packet handling conventions

[View Answer](#)

Answer: a

Explanation: Error reporting is handled by ICMP.

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2. Which of the following field in IPv4 datagram is not related to fragmentation?

- a) Flags
- b) Offset
- c) TOS
- d) Identifier

[View Answer](#)

Answer: c

Explanation: TOS-type of service identifies the type of packets.

3. The TTL field has value 10. How many routers (max) can process this datagram?

- a) 11
- b) 5
- c) 10
- d) 1

[View Answer](#)

Answer: c

Explanation: TTL field is decremented by one each time the datagram is processed by a router.

4. If the value in protocol field is 17, the transport layer protocol used is ____.

- a) TCP
- b) UDP
- c) Either of the mentioned
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: For TCP it is 6.

5. The data field can carry which of the following?

- a) TCP segment
- b) UDP segment
- c) ICMP messages
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: Data field usually has transport layer segment, but it can also carry ICMP messages.

6. What should be the flag value to indicate the last fragment?

- a) 0
- b) 1

- c) TTI value
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: flag=0 indicates that it is the last fragment.

7. Which of these is not applicable for IP protocol?

- a) is connectionless
- b) offer reliable service
- c) offer unreliable service
- d) None of the mentioned

[View Answer](#)

Answer: b

Explanation: Ip offers unreliable service.

8. Fragmentation has following demerits

- a) complicates routers
- b) open to DOS attack
- c) overlapping of fragments.
- d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: Fragmentation makes the implementation complex and also can create DOS attack.

9. Which field helps to check rearrangement of the fragments?

- a) offset
- b) flag
- c) TTL
- d) identifier

[View Answer](#)

Answer: a

Explanation: offset field specifies where the fragment fits in the original datagram.

Computer Networks Questions & Answers – IPv6

This set of Computer Networks Questions & Answers focuses on "IPv6".

1. The size of IP address in IPv6 is

- a) 4bytes

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- b) 128bits
- c) 8bytes
- d) 100bits

[View Answer](#)

Answer: b

Explanation: An IPv6 address is 128 bits long.

2. The header length of an IPv6 datagram is _____.

- a) 10bytes
- b) 25bytes
- c) 30bytes
- d) 40bytes

[View Answer](#)

Answer: d

Explanation: IPv6 datagram has fixed header length of 40bytes, which results in faster processing of the datagram.

3. In the IPv6 header, the traffic class field is similar to which field in the IPv4 header?

- a) Fragmentation field
- b) Fast-switching
- c) ToS field
- d) Option field

[View Answer](#)

Answer: c

Explanation: This field enables to have different types of IP datagram.

4. IPv6 does not use _____ type of address

- a) Broadcast
- b) Multicast
- c) Anycast
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: Broadcast has been eliminated in IPv6.

5. These are the features present in IPv4 but not in IPv6.

- a) Fragmentation
- b) Header checksum
- c) Options


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d) All of the mentioned

[View Answer](#)

Answer: d

Explanation: All the features are only present in IPv4 and not IPv6.

6. The _____ field determines the lifetime of IPv6 datagram

- a) Hop limit
- b) TTL
- c) Next header
- d) None of the mentioned

[View Answer](#)

Answer: a

Explanation: The Hop limit value is decremented by one by a router when the datagram is forwarded by the router. When the value becomes zero the datagram is discarded.

7. Dual-stack approach refers to

- a) Implementing Ipv4 with 2 stacks
- b) Implementing Ipv6 with 2 stacks
- c) Node has both IPv4 and IPv6 support
- d) None of the mentioned

[View Answer](#)

Answer: c

Explanation: dual-stack is one of the approach used to support IPv6 in already existing systems.

8. Suppose two IPv6 nodes want to interoperate using IPv6 datagrams but are connected to each other by intervening IPv4 routers. The best solution here is

- a) use dual-stack approach
- b) Tunneling
- c) No solution
- d) Replace the system

[View Answer](#)

Answer: b

Explanation: The IPv4 routers can form a tunnel.

9. Teredo is an automatic tunneling technique. In each client the obfuscated IPv4 address is represented by bits

- a) 96 to 127
- b) 0 to 63
- c) 80 to 95

Multiple Choice Questions of Computer Networking

1-1 Computer Network is

- A. Collection of hardware components and computers
- B. Interconnected by communication channels
- C. Sharing of resources and information
- D. All of the Above

1-2 What is a Firewall in Computer Network?

- A. The physical boundary of Network
- B. An operating System of Computer Network
- C. A system designed to prevent unauthorized access
- D. A web browsing Software

1-3 How many layers does OSI Reference Model has?

- A. 4
- B. 5
- C. 6
- D. 7

1-4 DHCP is the abbreviation of

- A. Dynamic Host Control Protocol
- B. Dynamic Host Configuration Protocol
- C. Dynamic Hyper Control Protocol
- D. Dynamic Hyper Configuration Protocol

1-5 IPV4 Address is

- A. 8 bit
- B. 16 bit
- C. 32 bit
- D. 64 bit

1-6 DNS is the abbreviation of

- A. Dynamic Name System
- B. Dynamic Network System
- C. Domain Name System
- D. Domain Network Service

1-7 What is the meaning of Bandwidth in Network?

- A. Transmission capacity of a communication channels
- B. Connected Computers in the Network
- C. Class of IP used in Network
- D. None of Above

1-8 ADSL is the abbreviation of

- A. Asymmetric Dual Subscriber Line
- B. Asymmetric Digital System Line
- C. Asymmetric Dual System Line
- D. Asymmetric Digital Subscriber Line

1-9 What is the use of Bridge in Network?

- A. to connect LANs
- B. to separate LANs
- C. to control Network Speed
- D. All of the above

1-10 Router operates in which layer of OSI Reference Model?

- A. Layer 1 (Physical Layer)
- B. Layer 3 (Network Layer)
- C. Layer 4 (Transport Layer)
- D. Layer 7 (Application Layer)

[Click Here for Answers](#)

1-D / 2-C / 3-D / 4-B / 5-C / 6-C / 7-A / 8-D / 9-A / 10-B

Multiple Choice Questions of Computer Networking

2-1 Each IP packet must contain

- A. Only Source address
- B. Only Destination address
- C. Source and Destination address
- D. Source or Destination address

2-2 Bridge works in which layer of the OSI model?

- A. Application layer
- B. Transport layer
- C. Network layer
- D. Datalink layer

2-3 _____ provides a connection-oriented reliable service for sending messages

- A. TCP
- B. IP
- C. UDP
- D. All of the above

2-4 Which layers of the OSI model are host-to-host layers?

- A. Transport, Session, Presentation, Application
- B. Network, Transport, Session, Presentation
- C. Datalink, Network, Transport, Session
- D. Physical, Datalink, Network, Transport

2-5 Which of the following IP address class is Multicast

- A. Class A
- B. Class B
- C. Class C
- D. Class D

2-6 Which of the following is correct regarding Class B Address of IP address

- A. Network bit – 14, Host bit – 16
- B. Network bit – 16, Host bit – 14
- C. Network bit – 18, Host bit – 16
- D. Network bit – 12, Host bit – 14

2-7 The last address of IP address represents

- A. Unicast address
- B. Network address
- C. Broadcast address
- D. None of above

2-8 How many bits are there in the Ethernet address?

- A. 64 bits
- B. 48 bits
- C. 32 bits
- D. 16 bits

2-9 How many layers are in the TCP/IP model?

- A. 4 layers
- B. 5 layers
- C. 6 layers
- D. 7 layers

2-10 Which of the following layer of OSI model also called end-to-end layer?

- A. Presentation layer
- B. Network layer
- C. Session layer
- D. Transport layer

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[Click Here for Answers](#)

1 - C / 2 - D / 3 - A / 4 - A / 5 - D / 6 - A / 7 - C / 8 - B / 9 - A / 10 - D

Multiple Choice Questions of Computer Networking

3-1. Why IP Protocol is considered as unreliable?

- A. A packet may be lost
- B. Packets may arrive out of order
- C. Duplicate packets may be generated
- D. All of the above

3-2. What is the minimum header size of an IP packet?

- A. 16 bytes
- B. 10 bytes
- C. 20 bytes
- D. 32 bytes

3-3. Which of following provides reliable communication?

- A. TCP
- B. IP
- C. UDP
- D. All of the above

3-4. What is the address size of IPv6 ?

- A. 32 bit
- B. 64 bit
- C. 128 bit
- D. 256 bit

3-5. What is the size of Network bits & Host bits of Class A of IP address?

- A. Network bits 7, Host bits 24
- B. Network bits 8, Host bits 24
- C. Network bits 7, Host bits 23
- D. Network bits 8, Host bits 23

3-6. What does Router do in a network?

- A. Forwards a packet to all outgoing links
- B. Forwards a packet to the next free outgoing link
- C. Determines on which outing link a packet is to be forwarded
- D. Forwards a packet to all outgoing links except the originated link

3-7. The Internet is an example of

- A. Cell switched network
- B. circuit switched network
- C. Packet switched network
- D. All of above

3-8. What does protocol defines?

- A. Protocol defines what data is communicated.
- B. Protocol defines how data is communicated.
- C. Protocol defines when data is communicated.
- D. All of above

3-9. What is the uses of subnetting?

- A. It divides one large network into several smaller ones
- B. It divides network into network classes
- C. It speeds up the speed of network
- D. None of above

3-10. Repeater operates in which layer of the OSI model?

- A. Physical layer
- B. Data link layer
- C. Network layer
- D. Transport layer

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[Click Here for Answers](#)

1 - D / 2 - C / 3 - A / 4 - C / 5 - A / 6 - C / 7 - C / 8 - D / 9 - A / 10 - A