

Code No: **R42015**

**R10**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**WATER SHED MANAGEMENT**

**(Civil Engineering)**

**Time : 3 hours**

**Max. Marks: 75**

**Answer any Five Questions  
All Questions carry equal marks**

**\*\*\*\*\***

- 1 Explain the various parameters which influencing the development of water Shed in detail. Explain shape characteristics with diagrams. [15]
- 2 Explain estimation of soil loss due to erosion in detail. [15]
- 3 Explain various methods of runoff calculation. [15]
- 4 What is terracing? Explain bench terraces in detail. [15]
- 5 What are harvesting structures? Explain any three in detail with figures. [15]
- 6 What are the methods of gully control? Explain at least any three methods in detail. [15]
- 7 How to delineate watersheds in traditional methods and by using GIS & Remote sensing methods? [15]
- 8 Detail various erosion control measures? [15]



Code No: **R42015**

**R10**

**Set No. 2**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**WATER SHED MANAGEMENT**

**(Civil Engineering)**

**Time : 3 hours**

**Max. Marks: 75**

**Answer any Five Questions  
All Questions carry equal marks**

\*\*\*\*\*

- 1 a) What is the role of ecosystem? [8]
- b) What is social forestry and afforestation? [7]
- 2 Explain various methods of runoff calculations. [15]
- 3 Explain the various parameters which influencing the development of water Shed in detail with emphasis on socio-economic characteristics. [15]
- 4 Explain types of erosion in detail. [15]
- 5 “GIS & Remote sensing will help for better integrated management of watershed” Evaluate this statement. [15]
- 6 What is rainwater harvesting? Explain any three harvesting structures in detail with figures. [15]
- 7 Explain people’s participation, preparation of action plan for water shed management? [15]
- 8 Explain ploughing, furrowing, trenching, bunding, terracing in detail. [15]



Code No: **R42015**

**R10**

**Set No. 3**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**WATER SHED MANAGEMENT**

**(Civil Engineering)**

**Time : 3 hours**

**Max. Marks: 75**

**Answer any Five Questions  
All Questions carry equal marks**

**\*\*\*\*\***

- 1 What are the objectives and need for watershed development in India? [15]
- 2 Explain at least two types of dams to control erosion in detail with sketches. [15]
- 3 a) What is ecosystem? [8]  
b) What is crop husbandry and sustainable agriculture? [7]
- 4 What is artificial recharge? Explain any three harvesting structures in detail with figures. [15]
- 5 Explain Universal soil loss equation in detail. [15]
- 6 Explain various methods of runoff calculation. [15]
- 7 Explain the various parameters which influencing the development of water Shed in detail with emphasis on geology. [15]
- 8 How integrated management of watershed can be achieved by using GIS & Remote sensing techniques? [15]



Code No: R42015

**R10**

**Set No. 4**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**WATER SHED MANAGEMENT**

**(Civil Engineering)**

**Time : 3 hours**

**Max. Marks: 75**

**Answer any Five Questions  
All Questions carry equal marks**

**\*\*\*\*\***

- 1 Illustrate with neat sketches to achieve Integrated watershed management system? [15]
- 2 Explain the various parameters which influencing the development of water Shed in detail with emphasis on land use. [15]
- 3 Illustrate Runoff calculation methods for various purposes. [15]
- 4 Detail various erosion control measures? [15]
- 5 Explain effects of erosion on land fertility and land capability in detail. [15]
- 6 What soil moisture conservation? Explain any three harvesting structures in detail with figures. [15]
- 7 What are the activities for planning of watershed management and its administrative requirements? [15]
- 8 a) What is inter, mixed and strip cropping? [8]  
b) What is cropping pattern and horticulture? [7]



Code No: **R42025**

**R10**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**NON-CONVENTIONAL SOURCES OF ENERGY**

**(Electrical and Electronics Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**

**All Questions carry equal marks**

\*\*\*\*\*

- 1 a) Estimate the monthly average daily global radiation using Klein's recommendation, on a horizontal surface at Baroda ( $22^{\circ}00' N$ ,  $73^{\circ}10' E$ ) during the month of March if the average sunshine hours per day are 9.5. Constants a, b given as 0.28 and 0.48 respectively. [10]  
b) Briefly explain Terrestrial Solar Radiation with relevant diagrams. [5]
- 2 a) List different methods of harnessing solar energy. Compare the advantages and disadvantages of concentrating collector over flat plate collector. [10]  
b) Briefly explain modes of tracking cylindrical parabolic concentrator. [5]
- 3 a) Explain with neat sketch, wind energy conversion systems and classify wind mills. [8]  
b) Wind at one atmosphere pressure and  $10^{\circ}C$  temperature has a velocity of 10 m/s. Calculate the total power density in the wind stream and the maximum obtainable power density. Given that  $R = 0.287 \text{ kJ/kgK}$ . Assume any missing data. [7]
- 4 a) Explain the method of power tracking system in PV system. Explain its advantages. [8]  
b) What are the different battery energy storage systems? Explain in detail. [7]
- 5 a) Explain in detail about anaerobic digestion and the different phases and the processes involved in it. [10]  
b) Explain the gas yield process in the bio gas plant operation. [5]
- 6 a) What are the different types of geothermal resources? How does harnessing of geothermal energy work? Explain. [8]  
b) Briefly explain methods of harnessing geothermal energy in geothermal power plants. [7]
- 7 a) Briefly explain critical criteria in the design of ocean thermal energy conversion plants. [8]  
b) What are the civil works design considerations for mini-hydel power plants? [7]
- 8 a) What is the need for direct energy conversions? Explain its limitations. [8]  
b) Briefly describe the operation fuel cell. How do you select fuels in the cell based on different operating conditions? [7]



Code No: **R42025**

**R10**

**Set No. 2**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**NON-CONVENTIONAL SOURCES OF ENERGY**

**(Electrical and Electronics Engineering)**

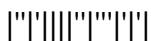
**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions  
All Questions carry equal marks**

\*\*\*\*\*

- 1 a) What is Klein's recommendation? Calculate the variation of day length over a year in Trivendrum ( $8^{\circ}29' N$ ,  $76^{\circ}57' E$ ) and plot the same. [10]  
b) Briefly explain Solar Radiation on tilted surface with neat sketches. [5]
- 2 a) Deduce the expression for useful energy gain and collection efficiency for flat-plate collectors. [8]  
b) Discuss physics of solar photo voltaic and hence photovoltaic energy conversion process. [7]
- 3 a) What is a power coefficient tip speed ratio and solidity of WECS? Explain the relation between these parameters. [10]  
b) Explain with neat sketch, wind energy conversion system. [5]
- 4 a) Explain the method of maximum power tracking system in wind power system. Explain its advantages. [8]  
b) What are the different battery energy storage systems? Explain in detail. [7]
- 5 What are the reactions phases taking place in a digester? Mention the various factors affecting the generation of bio-gas. [15]
- 6 a) What principles guide in the location of geothermal power station? Explain. [8]  
b) What are the different types of wells in geothermal energy? How they are used? [7]
- 7 a) With reference to neat layout diagrams, explain the operation of a closed cycle OTEC plant. [8]  
b) Explain wave energy conversion technique in detail with neat layout diagrams. [7]
- 8 a) Explain working principle of direct energy conversions and its limitations. [8]  
b) What is a fuel cell? Discuss different types of fuel cells what are the advantages of fuel cell energy. [7]



Code No: R42025

**R10**

**Set No. 3**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**NON-CONVENTIONAL SOURCES OF ENERGY**

**(Electrical and Electronics Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions  
All Questions carry equal marks**

\*\*\*\*\*

- 1 a) Estimate the average daily global radiation on a horizontal surface in Srinagar (34° 06' N) if the average sunshine hours per day are 9.5,  $a = 0.35$ ,  $b = 0.4$  and March 16<sup>th</sup> is the typical day for that month. [10]  
b) Briefly explain extraterrestrial Solar Radiation with relevant diagrams. [5]
- 2 a) Briefly discuss any two ways of solar energy storage methods. [8]  
b) Derive the relation for transmission coefficient for series of glass covers in flat plate collectors. [7]
- 3 a) Derive an expression for maximum output fraction from horizontal axis wind power. [10]  
b) Briefly describe *cut-in speed* and *cut-out speed* in wind energy conversion system. [5]
- 4 a) What are the different methods of maximum power tracking in PV systems? Explain them in brief. [10]  
b) What is meant by battery energy storage system? How it is used? [5]
- 5 What are the reactions phases taking place in a digester? Mention the various factors affecting the generation of bio-gas. [15]
- 6 a) How is geothermal energy generated inside the earth crust? In India where is geothermal energy available? [8]  
b) Briefly explain methods of harnessing geothermal energy in geothermal power plants. [7]
- 7 a) What are the different thermodynamic cycles in OTEC? Describe in brief. [5]  
b) Explain the methods for the utilization of tidal energy in single basin arrangement. [10]
- 8 a) Explain Carnot cycle. Discuss direct energy conversion methods. [8]  
b) Discuss selection of fuels in the fuels cells and their operating conditions. [7]



Code No: **R42025**

**R10**

**Set No. 4**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**NON-CONVENTIONAL SOURCES OF ENERGY**

**(Electrical and Electronics Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions  
All Questions carry equal marks**

\*\*\*\*\*

- 1 a) Determine the altitude and azimuth angle at 3pm(IST) on June 15<sup>th</sup> for Mumbai (18<sup>o</sup>54' N, 72<sup>o</sup>49' E). [8]  
b) For the above location, determine the angle of incidence over a south facing surface with tilt angle of 15<sup>o</sup> with horizontal. Also calculate hour of the sunrise and length of the day. [7]
- 2 a) What are different applications of solar energy? Briefly mention the advantages and disadvantages of each one. [10]  
b) Briefly explain effect of various parameters on collector performance. [5]
- 3 a) List and briefly discuss the factors to be considered in selecting the site of land based wind mill. [8]  
b) Wind at one atmosphere pressure and 10<sup>o</sup>C temperature has a velocity of 10 m/s. Calculate the total power density in the wind stream and the maximum obtainable power density. Given that  $R = 0.287 \text{ kJ/kgK}$ . Assume any missing data. [7]
- 4 a) What are the different methods of maximum power tracking methods in PV systems? Explain them in brief. [10]  
b) What is meant by battery energy storage system? How it is used? [5]
- 5 a) What are the advantages and disadvantages of bio-mass energy? Explain the process of anaerobic digestion. [10]  
b) Discuss combustion characteristics of bio-gas in brief. [5]
- 6 a) What is the prospect of geothermal energy? How does harnessing of geothermal energy work? Explain. [8]  
b) What are the different types of wells in geothermal energy? How they are used? [7]
- 7 a) Briefly describe site selection criteria in OTEC. [5]  
b) Explain the principle, advantages and limitations of tidal power generation. Write a note on prospect of tidal power generation in India. [10]
- 8 a) Discuss direct energy conversion process. Explain different methods in it. [8]  
b) What are the advantages of fuel cell energy? Discuss on alkaline fuel cell and hydrogen fuel cell. [7]





Code No: **R4204A**

**R10**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**

**TELEVISION ENGINEERING**  
**(Electronics & Communication Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 a) Explain in details the chromaticity diagram for obtaining different chrominance signal. [8]  
b) Explain Luminance and chrominance signals. [7]
- 2 a) What are the differences between positive and negative modulation techniques? Which of these modulation techniques is used in TV systems and Why? [8]  
b) Draw and explain the block diagram of TV transmitter. [7]
- 3 a) Explain the construction and operation of Silicon Diode Array Vidicon camera tube. [8]  
b) Distinguish between Monochrome TV camera and color camera. [7]
- 4 a) Explain the standards of American 525 line B&W TV system. [8]  
b) Explain color purity of picture tube. [7]
- 5 a) With neat sketch explain the RF tuner and IF subsystem of Monochrome TV receiver. [8]  
b) What is the significance of sync separation and explain its processing. [7]
- 6 a) What is the significance of AGC circuit? Distinguish the various types of AGC circuits used in TV system. [8]  
b) With neat sketch explain the IF subsystem of Black and White receivers. [7]
- 7 a) What is the significance of ACC amplifier? Explain in detail. [8]  
b) Write a short note on U, V demodulators. [7]
- 8 Write short notes on [8]  
a) Direct to Home Satellite TV    b) deflection drive Ics [7]



Code No: **R4204A**

**R10**

**Set No.2**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**

**TELEVISION ENGINEERING**  
**(Electronics & Communication Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

- 1 a) With neat sketch explain the procedure for generation of color signals. [8]  
b) Explain in detail the PAL system. [7]
- 2 a) Compare positive and negative transmission. [8]  
b) Explain the functional block for the sound system in a T.V. Receiver. [7]
- 3 a) Explain the construction and operation of Image orthicon camera tube and list its draw backs. [8]  
b) What is the significance of CCD Image Sensors? Explain. [7]
- 4 a) With neat sketch explain the NTSC color system. [8]  
b) Explain the precaution to be taken with the television picture tubes. [7]
- 5 a) Define flicker effect. What are the methods to avoid flicker effects? [8]  
b) Explain how the Y signal is produced for transmission to the receiver. [7]
- 6 a) With neat sketch explain the IF subsystem of color receivers. [8]  
b) Explain the schematic diagram of a remote control IR transmitter and IR receiver. [7]
- 7 a) Explain the principle and operation of 180° PAL–SWITCH circuitry. [8]  
b) Write a short notes on color Killer circuit. [7]
- 8 Write short notes on [8]  
a) AFC [7]      b) k noise in sync pulses [7]



Code No: **R4204A**

**R10**

**Set No.3**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**

**TELEVISION ENGINEERING**  
**(Electronics & Communication Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

**\*\*\*\*\***

- 1 a) Draw and explain the block diagram of TV broadcasting system. [8]  
b) Explain the differences between Interlaced scanning and Sequential scanning. [7]
- 2 a) Explain the various Antennas for reliable transmission of TV signals. [8]  
b) Draw the block diagram to obtain U and V signals. [7]
- 3 a) Explain the construction and operation of Vidicon camera tube. [8]  
b) Explain the block diagram of a monochrome TV receiver. [7]
- 4 a) Give in detail the characteristics and specifications of picture tube. [8]  
b) Explain the 625-line monochrome system. [7]
- 5 a) Explain block diagram of RF tuner section. [8]  
b) With block diagram explain the PAL chroma Decoder IC 7A7699. [7]
- 6 a) What is the principle of Tuner operation and distinguish between VHF and UHF tuners. [8]  
b) Explain the detection process involved in video and intercarrier sound signal. [7]
- 7 a) Explain colourplexed composite video signal. [8]  
b) Write a short note on color Killer circuit. [7]
- 8 Write short notes on [8]  
a) Single ended AFC circuit. b) Digital TV Receiver [7]



Code No: R4204A

**R10**

**Set No.4**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**

**TELEVISION ENGINEERING**  
**(Electronics & Communication Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

- 1 a) Explain with neat sketches, the differences between Horizontal and vertical scanning processes. [8]  
b) Justify "All TV systems have odd number of Scanning lines". [7]
- 2 a) Explain VSB signal Transmission and Reception and merits and demerits. [8]  
b) Explain about TV broadcast channels. [7]
- 3 a) What are the various TV Camera tubes, compare their merits and demerits. [8]  
b) Explain the block diagram of a monochrome TV receiver. [7]
- 4 a) Explain the magnetic deflection used in television picture tubes. [8]  
b) Explain the construction and working principle of a Trinitron color picture tube. [7]
- 5 a) Explain various types of raster distortions. [8]  
b) Draw the block diagram of digital PAL-D color TV receiver. [7]
- 6 a) What is the procedure involved in noise cancellation in IF subsystem. [8]  
b) Explain various digital tuning techniques. [7]
- 7 a) Explain I signal, Q signal, B-Y signal, R-Y signal and G-Y signal used in colour TV System. [8]  
b) Write a short note on Burst phase discriminator. [7]
- 8 a) Write short notes on Digital Satellite TV. [8]  
b) Write short notes on separation of frame and line sync pulses. [7]



Code No: **R42059**

**R10**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**INFORMATION RETRIEVAL SYSTEMS**

**(Computer Science and Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions  
All Questions carry equal marks**

\*\*\*\*\*

- 1 a) How the Information Retrieval System is related to Database Management System? [6]  
b) Explain various types of Information Retrieval Systems. [9]
- 2 a) What is a Browse capability? Explain about various browse capabilities. [10]  
b) Explain Document database search. [5]
- 3 a) Describe how the PAT Data structure is different from N-gram data structure. [9]  
b) Write short notes on Dictionary look-up stemmers. [6]
- 4 a) Differentiate Full Item indexing, Public File Indexing and Private File Indexing. [7]  
b) What is a Pre-coordination? How it is different from linkages? [8]
- 5 a) What is a cluster? Give the hierarchy of Clusters. [8]  
b) Explain the process of Thesaurus generation. [7]
- 6 a) Discuss the weighted searches of Boolean systems. [8]  
b) What are the processing steps used in automatic relevance feed back to enhance user query? Explain. [7]
- 7 a) Write about information visualization technologies. [8]  
b) Discuss the terms Cognition and Perception of information visualization. [7]
- 8 a) Explain various Software text search algorithms. [9]  
b) What is TREC results and how it can be used in information system evaluation? [6]

Code No: **R42059**

**R10**

**Set No. 2**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**INFORMATION RETRIEVAL SYSTEMS**

**(Computer Science and Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions  
All Questions carry equal marks**

\*\*\*\*\*

- 1 a) Describe the functional overview of Information Retrieval System. [8]  
b) How data warehouses are housed as a source of Information systems? [7]
- 2 a) Explain how the search process takes place when the information is retrieved. [6]  
b) What is concept indexing approach? Explain in detail with a suitable example. [9]
- 3 a) Explain in detail about stemming process. [9]  
b) Write short notes on Inverted File structures. [6]
- 4 a) Explain about classes of Automatic Indexing. [10]  
b) Briefly describe about Statistical Indexing. [5]
- 5 a) Explain various techniques in Automatic Term Clustering. [10]  
b) Describe briefly Item clustering. [5]
- 6 a) Why is relevance feedback required in User Search Techniques? Explain. [9]  
b) Describe briefly why Search Statements and Binding are required. [6]
- 7 a) Explain the main aspects of human visualization process. [8]  
b) Explain various information visualization technologies. [7]
- 8 a) Differentiate between Boyer-Moore Algorithm and Knuth-Pratt algorithm. [6]  
b) Explain briefly Hardware text search systems. [9]



Code No: **R42059**

**R10**

**Set No. 3**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**INFORMATION RETRIEVAL SYSTEMS**

**(Computer Science and Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions  
All Questions carry equal marks**

**\*\*\*\*\***

- 1 a) Explain various types of Information Retrieval Systems. [7]  
b) How Digital Libraries can be used as Information base Systems? [8]
- 2 a) Explain the usage of Cataloging and Indexing in Information Retrieval Systems. [9]  
b) Explain the data flow in an information processing system with a neat sketch. [6]
- 3 a) Describe briefly Hypertext data structure. [7]  
b) Discuss the Porter stemming algorithm [8]
- 4 a) Explain the role of automatic indexing in Natural languages. [8]  
b) How Pre-coordination is different from Hypertext linkages? Explain [7]
- 5 a) Distinguish term clustering and item clustering. Explain with suitable examples [8]  
b) What is the need of Thesaurus in a document and how it can be generated? [7]
- 6 a) Briefly describe the concept of Ranking. [6]  
b) Explain the similarity measures that can be used in User search techniques. [9]
- 7 a) Describe the need for information visualization. Under what circumstances is information visualization is not useful? Quote an example. [9]  
b) Describe briefly the terms Cognition and Perception [6]
- 8 a) What are the various Text search algorithms? Explain them in detail. [10]  
b) Explain the concept of push and pull process. [5]



Code No: **R42059**

**R10**

**Set No. 4**

**IV B.Tech II Semester Regular/Supplementary Examinations, April - 2015**

**INFORMATION RETRIEVAL SYSTEMS**

**(Computer Science and Engineering)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**

**All Questions carry equal marks**

**\*\*\*\*\***

- 1 a) Describe the functional overview of Information Retrieval System [8]  
b) What is the need of Information retrieval systems and what are its objectives? [7]
- 2 a) Explain the Browse capabilities of Vocabulary, Ranking, Canned query and Multimedia. [10]  
b) Describe the automatic indexing. [5]
- 3 a) Describe Signature file structure. [6]  
b) Explain various Stemming algorithms. [9]
- 4 a) What is concept indexing approach? Explain in detail with a suitable example. [8]  
b) Write about the Hypertext linkages. [7]
- 5 a) Explain the process involved in Term clustering. [9]  
b) Write short notes on Thesaurus. [6]
- 6 a) Explain Selective dissemination of information search [8]  
b) Describe briefly Online IR systems and OPACs. [7]
- 7 a) Describe the need for information visualization. [7]  
b) Explain the main aspects of human visualization process. [8]
- 8 a) Explain the Boyer-Moore text search algorithm with an example. [8]  
b) How the information system is evaluated and what are the measures used in it? [7]





Code No: **R4205B**

**R10**

**Set No. 1**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**  
**MULTIMEDIA AND APPLICATION DEVELOPMENT**  
**(Common to Computer Science & Engineering and Information Technology)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 Write short notes on the following?
  - a) Hypermedia and multimedia [5]
  - b) 8-bit gray level image [5]
  - c) Synchronized Multimedia Integration Language(SMIL) [5]
- 2 a) Write a short note on graphic and image data types. [8]  
b) Write a short note on macromedia director file formats. [7]
- 3 Explain type casting mechanism in Action Script 2.0. [15]
- 4 a) Write about overloading of methods in Action Script 2.0? Give an example program. [8]  
b) Can you overload constructor in Action Script 2.0? Explain. [7]
- 5 What is variable length encoding (VLC)? Explain Shannon-Fano algorithm in detail? [15]
- 6 a) Write a short note on lossless image compression. [8]  
b) Explain in detail about Dictionary Based coding. [7]
- 7 Discuss the issues of VOP-based motion compensation in MPEG-4 in detail. [15]
- 8 a) Explain broad cast schemes for video on demand in detail. [8]  
b) What is the main difference between the OSI and TCP/IP reference models? [7]



Code No: **R4205B**

**R10**

**Set No. 2**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**  
**MULTIMEDIA AND APPLICATION DEVELOPMENT**  
**(Common to Computer Science & Engineering and Information Technology)**

**Time: 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 a) How analog sound signal is converted to digital sound signal? Explain. [9]  
b) Explain the following image data types.  
i) 1-bit image      ii) 24-Bit Color image      iii) 8-Bit Gray level image [6]
- 2 Explain in detail different color models in images. [15]
- 3 a) Discuss the key object oriented programming concepts in Action Script 2.0. [8]  
b) Write about Data types and type checking in Action Script 2.0. [7]
- 4 a) Briefly explain when to use composition over inheritance. [8]  
b) Explain the following briefly  
i). Is - A relation      ii). Has - A relation      iii). Uses - A relation [7]
- 5 a) Explain with examples 'how to structure an OOP flash application'. [8]  
b) Explain in detail about how to improve the components package. [7]
- 6 a) Briefly explain basics of information theory. [8]  
b) Write about lossless JPEG in detail. [7]
- 7 a) Write about Set Partitioning in Hierarchical Trees (SPIHT). [8]  
b) Explain MPEG-2 Scalabilities. [7]
- 8 a) Explain Harmonic broad casting in detail. [8]  
b) Explain OSI reference model with respective to multimedia communication. [7]



Code No: **R4205B**

**R10**

**Set No. 3**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**  
**MULTIMEDIA AND APPLICATION DEVELOPMENT**  
**(Common to Computer Science & Engineering and Information Technology)**

**Time : 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

\*\*\*\*\*

- 1 a) Discuss various software tools available for graphics and image editing. [8]  
b) Discuss any three novel applications of the internet and multimedia. [7]
- 2 Explain in detail different color models in video. [15]
- 3 a) Discuss how type casting is done in Action Script2.0. [8]  
b) Write about the limitations of type casting in Action Script 2.0. [7]
- 4 a) What is inheritance? Discuss how to override methods and properties with suitable examples. [8]  
b) Write about Action Script2.0's Exception handling cycle. [7]
- 5 Discuss an OOP application framework with the help of a currency conversion application. [15]
- 6 a) Compare and contrast lossless and lossy compression algorithms. [8]  
b) What is differential coding? Explain differential coding of images with suitable examples. [7]
- 7 Write a note on digital video compression. Also explain MPEG motion video compression. How is it different from JPEG? [15]
- 8 Explain the following terms:
  - a) Real time –Transport Protocol(RTP) [5]
  - b) IP Multicasting [5]
  - c) Internet Telephony [5]



Code No: **R4205B**

**R10**

**Set No. 4**

**IV B.Tech II Semester Regular/Supplementary Examinations, April- 2015**  
**MULTIMEDIA AND APPLICATION DEVELOPMENT**  
**(Common to Computer Science & Engineering and Information Technology)**

**Time : 3 hours**

**Max. Marks: 75**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 a) Write about multimedia authoring. [8]  
b) What is MIDI? How is a basic MIDI message structured? [7]
- 2 a) Compare and contrast YIQ color model and Y Cb Cr color model. [8]  
b) Explain different types of video signals. [7]
- 3 a) Briefly describe the main features of Action Script 2.0. [7]  
b) What is circumventing type checking? Explain with the help of an example. [8]
- 4 a) Discuss how a class is created in Action Script 2.0 with illustrative examples. [7]  
b) What is constructor? How does it differ from accessor methods, illustrate with examples. [8]
- 5 a) Write about movie clip sub classes in detail. [8]  
b) Explain the currency converter class in detail. [7]
- 6 Write in detail about JPEG image compression standard. [15]
- 7 Write a note on the following:  
a) Intelligent Multimedia Systems [8]  
b) Virtual Reality [7]
- 8 a) Discuss quality of service (QoS) for multimedia transmission. [8]  
b) Write in detail about RTP. [7]



Code No: L0423

**R07**

**Set No. 1**

**IV B.Tech II Semester Supplementary Examinations, April - 2015**  
**WIRELESS COMMUNICATIONS AND NETWORKS**  
**(Common to Electronics & Communication Engineering and Electronics and  
Computer Engineering)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions**  
**All Questions carry equal marks**

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- 1 a) Explain the principle of Frequency Hopping Spread Spectrum transmitter and receiver with the help of block diagrams. [10]  
b) Explain the difference between slow FHSS and fast FHSS. [6]
- 2 a) Differentiate between wireless and fixed telephone networks. [6]  
b) What are the various protocols used in Packet radio? Explain [10]
- 3 a) List out the various wireless data services and explain the CDPD with the help of a neat diagram. [10]  
b) Compare ARDIS and RMD wireless data services. [6]
- 4 a) Explain the functions of wireless datagram protocol with a neat diagram. [8]  
b) Write short notes on wireless transaction protocol. [8]
- 5 a) Write the advantages and disadvantages of wireless LAN technology. [6]  
b) Explain the architecture of IEEE 802.11 protocol with a neat diagram. [10]
- 6 a) Describe the features of WLL technology. [6]  
b) What are the usage models defined in Bluetooth? Explain. [10]
- 7 a) With a block diagram explain GPRS architecture. [10]  
b) Explain the short messaging service in GSM. [6]
- 8 a) Explain about HIPERLAN 2 standard? [8]  
b) Give the general structure of an ATM switch. [8]



Code No: L0423

**R07**

**Set No. 2**

**IV B.Tech II Semester Supplementary Examinations, April - 2015**

**WIRELESS COMMUNICATIONS AND NETWORKS**

**(Common to Electronics & Communication Engineering and Electronics and  
Computer Engineering)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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- 1 a) Explain the principle of FDMA with relevant diagrams and describe the effects of intermodulation. [10]  
b) The bandwidth of each channel in a FDMS system is 30 KHz and the allocated frequency spectrum is 12.5 MHz, guard band is 10 KHz. Find the total number of channels provided by the system. [6]
- 2 a) What are the various switching techniques? Explain in detail with relevant diagrams. [10]  
b) Describe the traffic routing in wireless networks. [6]
- 3 a) What are the features of ISDN? Explain the principle with a block diagram. [10]  
b) Compare the broadband ISDN and ATM. [6]
- 4 a) Draw the block diagram of WAP architecture and explain each block. [10]  
b) Write short notes on WAP services. [6]
- 5 a) Explain the applications of wireless LANs. [6]  
b) Draw the IEEE 802.11 frame format and explain each subfield. [10]
- 6 a) Describe the applications of Bluetooth. [6]  
b) Draw the architecture of Bluetooth and explain in detail. [10]
- 7 a) Explain in detail the data oriented CDPD Network. [10]  
b) Write short notes on the data rates in GPRS. [6]
- 8 a) Explain ATM virtual circuits with a neat figure. [8]  
b) Explain the MAC protocol in Ad-hoc wireless networks. [8]



Code No: L0522

**R07**

**Set No. 1**

**IV B.Tech II Semester Supplementary Examinations, April - 2015**

**DESIGN PATTERNS**

**(Common to Computer Science & Engineering and Information Technology)**

**Time: 3 hours**

**Max. Marks: 80**

**Answer any FIVE Questions  
All Questions carry equal marks**

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- 1 a) What is meant by Design Pattern? Explain the essential elements of a pattern. [8]  
b) Describe various design patterns. [8]
- 2 a) What is a Lexi? Explain various problems in Lexi's design. [8]  
b) With a neat diagram, Explain the Object structure for recursive composition of text and graphics. [8]
- 3 a) Discuss the benefits of Creational Patterns. [8]  
b) Write the motivation of Abstract Factory and its applications. [8]
- 4 a) What are the intent, motivation and applicability of adapter patterns? [8]  
b) Explain the implementation of adapter patterns with an example. [8]
- 5 a) Write the motivation of Decorator pattern and discuss its uses. [8]  
b) Discuss various implementation issues involved in applying Decorator pattern. [8]
- 6 a) Discuss the motivation of Iterator design pattern. [8]  
b) Describe implementation issues to be considered in Chain of Responsibility [8]
- 7 a) Draw the structure of Mediator design pattern and write the applications. [8]  
b) Discuss the intent and motivation of State design pattern. [8]
- 8 Write short notes on  
i). Design Vocabulary [6]  
ii). Visitor pattern's participants [5]  
iii). Composition and Compositor [5]

