Code No. 6404 / N

FACULTY OF ENGINEERING

B.E. 4/4 (Common to All) I-Semester (New) (Main) Examination, December 2013

Subject : Entrepreneurship
(Electives - I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. What is meant by intrapreneur? How in an intrapreneur different from an entrepreneur?
2. Give different concepts of entrepreneurs.
3. State the significance of collaborative interaction for technology development.
4. What do you understand by marketing mix?
5. Define a project report.
6. Distinguish between PERT and CPM.
7. What is working capital?
8. What is selective control of inventory ? Why is it needed?
9. How is a project formulated?
10. What is microenterprise?

PART – B (50 Marks)

11. Explain linkages between small, medium and large industries.

12. (a) Explain about first generation entrepreneur.
    (b) Explain about women entrepreneur.

13. (a) Write an essay on the growth of entrepreneurship in India.
    (b) How are Competence, Opportunities and Challenges related to each other?

14. What do you understand by project identification? Discuss with examples, the process involved in project identification.

15. (a) How is a project formulated? Give an overview.
    (b) What do you understand by project appraisal ? Why it is done?

16. (a) What are various factors motivating people to become entrepreneurs?
    (b) Discuss the advantages and limitations of PERT and CPM with suitable examples.

17. Write short notes on the following:
    (a) Technical Feasibility
    (b) Market Assessment
    (c) Working Capital

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Code No. 6173 / O

FACULTY OF ENGINEERING

B.E. 4/4 I – Semester (Old) Examination, December 2013

Subject: Entrepreneurship (Elective – I)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1. Enumerate at least three advantages of SSI units over large units.
2. List the advantages and disadvantages of Private Limited Company over 'Sole Trader'.
3. Explain the factors to be considered while deciding on the choice of technology.
4. What is break-even analysis? Explain its use in financial analysis of a project.
5. What are the sources of short-term funds?
6. How do you carry out business opportunity survey?
7. When do you use PERT? Give two examples.
8. Explain any two qualities of Leadership.
9. Describe the need for achievement, need for affiliation and need for power.
10. What is working capital? How do you estimate if?

PART – B (50 Marks)

11.(a) Define leadership. Justify the statement "The essence of leadership is followership".
(b) What are the theories of leadership? Explain.

12. What Time Management Techniques are available that ensure a project being completed on time.

13.(a) Bring out the relationship between economic growth and entrepreneurship.
(b) What is CPM? Explain its use in planning a project execution for a SSI.

14.(a) What are the risks faced and rewards gained by entrepreneurs while setting up a SSI?
(b) What is business opportunity survey? Explain how do you carryout the same.

15.(a) What are the problems and risks faced by women entrepreneurs?
(b) What is margin money? What are the sources of finance for starting a SSI?

16. What are the issues considered in Technical and Financial analysis of a project? Explain how you will carryout the same.

17. For any project known to you, show a detailed project report.

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Code No. 6184 / O

FACULTY OF ENGINEERING

B.E. 4/4 (EE/Inst.) I-Semester (Old) Examination, December 2013

Subject : VLSI Design
(Elective - I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. Draw the circuit of 2 input NAND CMOS circuit. (2)
2. Define a standard unit of capacitance Dcg. (2)
3. Design a cross logic circuit for the function. (3)

$$F=\overline{a.b+a.c+b.d}$$

4. How latch up is prevented in Bi cross circuits? (2)
5. What is the influence of FAN-IN and FAN OUT on gate design? (3)
6. Draw the circuit of a 3T dynamic RAM cell. (2)
7. What are the various layers in ICs? (3)
8. Explain circuit is a current mirror. (3)
9. Give the block representation of OP-Amp. (3)
10. Explain the significance of emitter area in BJTs. (2)

PART – B (50 Marks)

11. (a) Compare CMOS and BiCOMS technologies. (4)
    (b) Explain how a resistance and a capacitor are designed in VLSI circuits. (6)

12. (a) Compare inverters with various loads. (7)
    (b) Define rise time and fall time in CMOS inverter. (3)

13. (a) Explain the operation of a 6T SRAM cell. (6)
    (b) What are the various CAD tools used in the design of VLSI circuits? (4)

14. (a) Explain the process flow of a CMOS IC. (6)
    (b) Differentiate between oxidation and chemical vapour deposition. (4)

15. (a) Draw the circuits of Bipolar current mirror. Derive its output current expression. (5)
    (b) Draw the circuit and equivalent circuit of a common drives complifier in small signal low and sequency condition. Derive the expression for the voltage gain. (5)

16. (a) Draw the layout of a input NOR circuit. (4)
    (b) Draw the circuit and stack diagram of a 1-bit dynamic shift register cell. (6)

17. Write short notes on the following:
    (a) Lambda based design rules
    (b) Optical lithographs
    (c) Arithmetic logic unit

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Code No. 6411 / N

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) I-Semester (New) (Main) Examination, December 2013

Subject : HVDC Transmission
(Electives - I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. Name the different kinds of DC links. (2)
2. Give some of the details of HVDC systems. (3)
3. What is the effect of overlap? (2)
4. Draw the equivalent circuit of inverter. (3)
5. Write the basic equation of control. (2)
6. Give three limitations of manual control. (3)
7. What is commutation failure? (2)
8. Mention the sources of harmonics. (3)
9. Compare series and parallel MTDC system. (2)
10. Give the control aspects of MTDC system. (3)

PART – B (50 Marks)

11.(a) Draw and explain the break even distance of DC. transmission system. Give its range of values for DC transmission lines.
(b) Explain briefly about different types of HVDC links.

12.(a) With the help of neat sketches, analyze a six pulse rectifier bridge circuit with an overlap angle less than 60^{o}. Deduce the relevant equations.
(b) Draw the following wave forms to scale when working as a rectifier.
(i) Output DC voltage (ii) Value currents (iii) Voltage across valves
Hence, estimate the average DC Voltage on the output side.

13.(a) Briefly explain the desired control features in a DC transmission line.
(b) Discuss the relative merits of constant current control and constant voltage control in HVDC transmission.

14.(a) With a neat sketch, explain about constant extinction angle control.
(b) What is meant by current margin between two stations in HVDC link? Why the inverter station is generally operated as a constant voltage controller under normal conditions.

15.(a) Explain about DC Reactors, voltage and current oscillations.
(b) Draw a schematic diagram and describe the commutation principle in HVDC circuit breaker.

16. Give a detailed account of design aspects of the following filters.
(a) Single tuned filter
(b) Double tuned filter

17.(a) Classify MTDC Systems and explain each of them
(b) Give the applications of MTDC systems.

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Code No. 6182 / 0

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) I – Semester (Old) Examination, December 2013

Subject: High Voltage DC Transmission (Elective – I)

Time: 3 Hours **Max.Marks: 75**

Note: Answer all questions from Part A. Answer any five questions from Part B.

PART – A (25 Marks)

1. List out the limitations of HVDC transmission. (3)
2. In terms of economics compare the HVDC system with AC transmission system. (2)
3. Define the following: (3)
   a) Commutating reactance
   b) Extinction angle
4. Explain how the valve voltage rating is specified. (2)
5. What is the necessity of reversal of power in HVDC link? (3)
6. What are the reasons for not having the feedback control of power in a DC link? (2)
7. List out the applications of DC breakers. (2)
8. What are the functions of smoothing reactors in HVDC transmission systems? (3)
9. Explain about series MTDC system. (3)
10. Why do we need to modify the basic current margin method of control for the control of MTDC system? (2)

PART – B (50 Marks)

11.(a) Derive the expression for power at sending end and receiving end of an HVDC pole intern of sending end voltage, receiving end voltage and line resistance. (6)
(b) Explain about corona loss in AC and DC systems. (4)

12.(a) Explain in detail about the effect finite smoothing reactor in HVDC transmission system. (5)
(b) On a graph sheet derive the DC output voltage waveform the corresponding 3-phase AC waveforms for a six pulse bridge converter with the delay angle of 60 degrees and 120 degrees (non over-lapping case). (5)

13.(a) Explain in detail about constant extinction angle control method. (4)
(b) Explain about the following:
i) Constant current control (3)
ii) Control characteristics including voltage dependent current limit. (3)

14.(a) Draw the typical arrangement of surge arresters in a converter station and explain the principles of over voltage protection in DC system. (6)
(b) With neat diagram explain the basic concept of DC circuit interruption. (4)

15. Explain about the following MTDC control methods:
i) Decentralized current reference balancing method. (5)
ii) Current margin method. (5)

16.(a) Explain in detail about the effect of firing angle errors. (6)
(b) Explain the factors that affect the design of passive DC filters. (4)

17.(a) Explain about single commutation failure and double commutation failure. (4)
(b) Explain in detail about equidistant pulse control method. (6)

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Code No. 6413 / N

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) I-Semester (New) (Main) Examination, December 2013

Subject : Power Quality
(Electives - I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. What are causes of voltage sag and voltage swells? (3)
2. Define the following : (3)
   (i) Transients
   (ii) Phase angle Jump
3. Draw voltage tolerance curves and explain the importance of these curves. (4)
4. What is the effect of voltage sag in induction motors? (3)
5. Define THD and write the formula for it. (2)
6. What is the need of power quality data bases? (3)
7. Explain the differences in IEC and IEEE standards with respect to power quality. (4)
8. Explain the characteristics of voltage sag. (3)

PART – B (50 Marks)

9.(a) Explain the usefulness of power quality data processing and data analysing.
(b) Explain the importance and need of power quality study. (10)

10.(a) Explain the characterization of three phase voltage sags.
(b) Explain the calculation of voltage sag in a power system with an example. (10)

11.(a) Explain the effect of voltage sags on ASD's.
(b) Explain the types of voltage sags. (10)

12. Explain the method of calculating harmonics in industrial distribution system. (10)

13.(a) What are limitations and consideration for power quality monitoring?
(b) Explain the methods of mitigating harmonics. (10)

14.(a) What is the effect of harmonics on transformers and capacitors? (10)
(b) Explain the procedure to identify power quality problems and methods to mitigate them. (10)

17. Write short notes on the following: (10)
   (a) Voltage flicker
   (b) Interruption

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Code No. 6186 / O

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) I-Semester (Old) Examination, December 2013

Subject : Power Quality
(Elective-I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. What are power quality problems?
2. What is the purpose of PQ data?
3. Define phase angle jump?
4. Define voltage sag?
5. Define Harmonics
6. What are the applications of ASD?
7. What are the harmonic level in industrial distribution system?
8. What are the guidelines for limiting voltage harmonics?
9. What is the purpose of PQ monitoring?
10. Write some of monitoring devices?

PART – B (50 Marks)

11. (a) Define (i) Fault (ii) Outage (iii) Harmonic distortion
    (b) Explain the purpose of
    (i) Processing Data
    (ii) Data Analysis
    (iii) Creating PQ Database

12. Give an Analysis of sag magnitude.
    (a) Radial
    (b) Non-Radial system
    (c) Meshed system

13. Using block diagram approach discuss the operation of AC and DC drives.

14. What is effect of different types of faults on phase angle jumps explain in detail?

15. How is PQ monitoring done in power system site? Also explain some measurement Techniques.

16. Explain the effect of Sagson synchronous motors.

17. Write short notes on the following:
    (a) Flowchart for analysis of voltage sag
    (b) Cause of sag and swells
    (c) What is the purpose of standards?

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Code No. 6185 / 0

FACULTY OF ENGINEERING

B.E.4/4 (EE/Inst) I – Semester (Old) Examination, December 2013

Subject: Principles and Applications of Embedded Systems (Elective – I)

Time: 3 Hours **Max.Marks : 75**

Note: Answer all questions from Part – A. Answer any five questions from Part – B.

PART – A (25 Marks)

1. What are the types of embedded system? (2)
2. Describe SCON and PCON in 8051. (3)
3. What is bit level logical operation? (3)
4. State any two advantages of assembly language. (2)
5. List the different types of keyboard configurations. (2)
6. Describe Task Control Block. (3)
7. What are hard real-time scheduling considerations? (3)
8. How do you use mail box in inter task communication. (2)
9. What instruction level parallelism? (3)
10. What do you mean by CAN bus? (2)

PART – B (5x10 = 50 Marks)

11.(a) Explain the software tools in designing of an embedded system. (6)

(b) Briefly explain the parts of 8051. (4)

12.(a) Describe multiplication and division operations in 8051. (4)

(b) List and explain various addressing modes in 8051. (6)

13.(a) What is a display? Explain how seven segment numeric display works? (7)

(b) Describe shared data problem. (3)

14.(a) List and explain the laboratory tools available for embedded software developers. (5)

(b) How do you encapsulate semaphores and queues? Explain. (5)

15.(a) Discuss in detail about SHARC and its programming model. (7)

(b) Describe I^2C bus. (3)

16. Write short notes on the following:

(a) Internet enabled systems. (4)
(b) μC-OS (3)
(c) Pipes (3)

17.(a) Explain how interrupts can be used to develop a keyboard application. (5)

(b) List and explain different types of JUMP available in 8051. (5)

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Code No. 6412 / N

FACULTY OF ENGINEERING

B.E. 4/4 (EEE) I-Semester (New) (Main) Examination, December 2013

Subject : High Voltage Engineering
(Electives - I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. Define Time lag for breakdown of gas. (2)
2. Briefly explain about Half wave rectifier circuit used for generating high d.c. voltage. (3)
3. List the different methods of measuring high d.c. voltage. What are the limitations in each method? (3)
4. Write the advantages of the Chubb-Fortes circuit. (2)
5. Differentiate between a hot lighting stroke and a cold lighting stroke. (3)
6. List out the common test facilities available in the high voltage laboratories. (2)
7. Define Townsend's ionization coefficients. (3)
8. List out the methods of generating high AC voltages. (2)
9. What are the components of a multistage impulse generator? (3)
10. Draw the schematic diagram of Marx circuit arrangement for multistage impulse generator. (2)

PART – B (50 Marks)

11. Explain streams theory of Breakdown is gases. (10)

12. (a) With a neat sketch explain the working of a Van-de-Graaf generator. (5)
    (b) Explain about Cockroft-Walton voltage multiplier circuit. (5)

13. (a) Explain the analysis of impulse generator circuit of series RLC type. (5)
    (b) Explain the construction of impulse generator is brief. (5)

14. Explain the working principle and construction of an electrostatic voltmeter for very high voltages. What are its merits and demerits? (10)

15. (a) Explain the various tests performed on power transformers. (5)
    (b) Explain the factors which are to be considered while deciding the voltage and power rating of Test equipment. (5)

16. (a) Explain the cavitation and Bubble theory of breakdown in commercial liquids. (5)
    (b) Explain any two methods for generating high a.c. voltages. (5)

17. Write short notes on the following: (10)
    (a) Generating voltmeter
    (b) Lightening phenomena

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Code No. 6415 / N

FACULTY OF ENGINEERING

B.E. 4/4 (EEE/Inst.) I-Semester (New) (Main) Examination, December 2013

Subject : Information Security
(Electives - I)

Time : 3 Hours **Max. Marks: 75**

Note: Answer all questions of Part - A and answer any five questions from Part-B.

PART – A (25 Marks)

1. What are the components of ISS?
2. Define replication vector.
3. What is meant by software license infringement?
4. What is Kennedy-Cssabaum Act?
5. What are different information security policies?
6. What is contingency plan?
7. What are honey pots, hone nets and padded cell systems?
8. Explain different cipher methods.
9. Differentiate certification from accreditation.
10. What are five subject areas or domains on which maintenance model is based?

PART – B (50 Marks)

11. Explain Security Software development life cycle.

12.(a) Explain different attacks.
(b) Write about Ethical Concepts in IS.

13.(a) How is Risk Assessed?
(b) What are the criteria to carry out information asset valuation ? Discuss.

14. What is SETA? Explain.

15.(a) What is VPN? What are its types? Explain their modes of operation.
(b) What is IDS? What are its types? Explain.

16.(a) How do you secure web transaction with SET, SHTTP and SSL?
(b) How do you secure E-mail with S/MIME, PEM and PGP?

17.(a) Write short notes on security management maintenance model.
(b) What is digital forensic ? Explain its methodology.

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