

FACULTY OF ENGINEERING

**B.E. 4/4 (EEE/Inst.) II-Semester (Main & Backlog) Examination,
May / June 2017**

Subject : Renewable Energy Sources (Elective – III)

Time : 3 hours

Max. Marks : 75

Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.

PART – A (25 Marks)

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|----|--|---|
| 1 | Explain why importance is given to non-conventional energy sources. | 2 |
| 2 | Distinguish between conventional and non-conventional energy sources. | 3 |
| 3 | Distinguish between flat plate and concentrating collectors. | 2 |
| 4 | Enumerate the different main applications of solar energy. | 3 |
| 5 | Derive the expression for power developed due to wind. | 3 |
| 6 | Distinguish between vertical and horizontal axis wind rotors. | 2 |
| 7 | Define a Geo-thermal source. | 2 |
| 8 | What do you mean by biogas? | 3 |
| 9 | Discuss the relative advantages and limitations of tidal power projects. | 3 |
| 10 | Discuss the process of extracting energy from waves. | 2 |

PART – B (50 Marks)

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|----|--|----|
| 11 | Discuss renewable and conventional forms of energy. Highlight their merits and demerits. | 10 |
| 12 | a) Explain the working of paraboloid dish collector with a neat diagram. | 5 |
| | b) Explain the working principle of Brayton engine with necessary diagrams. | 5 |
| 13 | a) Explain the current-voltage characteristics of solar cells. Also define fill factor. | 5 |
| | b) What are the advantages and limitations of photovoltaic energy conversion? | 5 |
| 14 | a) Derive torque co-efficient (C_T) in wind energy conversion system. | 5 |
| | b) Sketch the diagram of horizontal axis wind turbine and explain the function of its main components. | 5 |
| 15 | a) How can Geo-thermal energy be utilized for electricity generation? | 5 |
| | b) Discuss the constructional details of a down draught Gasifier. | 5 |
| 16 | a) Explain the working of closed cycle Anderson OTEC plant. | 7 |
| | b) Discuss the impact of OTEC on environment. | 3 |
| 17 | Write short notes on : | |
| | a) Wind power plant | 5 |
| | b) Tidal energy | 5 |

FACULTY OF ENGINEERING**B.E. 4/4 (Inst.) II-Semester (Main & Backlog) Examination, May / June 2017****Subject : Process Plant Design and Safety Management (Elective – III)****Time : 3 hours****Max. Marks : 75****Note: Answer all questions from Part-A. Answer any FIVE questions from Part-B.****PART – A (25 Marks)**

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| 1 | What are the goals of plant auditing? | 3 |
| 2 | Draw the architecture of data historian. | 3 |
| 3 | What are the key factors that influence the selection of hazardous area classification? | 3 |
| 4 | What do you understand by water runs? | 2 |
| 5 | What is the concept of HAZOP? | 3 |
| 6 | What are the advantages of high integrity pressure protection system? | 2 |
| 7 | Mention the different types of firewalls. | 2 |
| 8 | What are digital certificates? | 2 |
| 9 | What is the workstation classifications based on hardware architecture? | 2 |
| 10 | What are the basic functions of the control system HMI? | 3 |

PART – B (50 Marks)

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| 11 | What is project management and documentation explain in detail? | 10 |
| 12 | a) Explain the concept of purging system with neat diagram. | 5 |
| | b) Write about hazardous area division classification. | 5 |
| 13 | Explain the following process hazard analysis procedures. | 10 |
| | a) Fault tree analysis | |
| | b) Failure mode and effects analysis | |
| 14 | Write about | 10 |
| | a) Operating system security | |
| | b) User authentication | |
| 15 | a) Write about virtual reality tools for testing control room concepts. | 5 |
| | b) What are the virtual reality software requirements for workstations design? | 5 |
| 16 | Write short notes on any two of the following | 10 |
| | a) Operator training and commissioning | |
| | b) Maintenance management systems | |
| | c) HIPPS justification with examples | |
| 17 | Explain entity concept and FISCO in detail. | 10 |

FACULTY OF ENGINEERING

B.E. 4/4 (Mech. /Prod.) II - Semester (Main & Backlog) Examination, May/June 2017

Subject : Product Design and Processing Planning (Elective – III)

Time : 3 Hours

Max. Marks: 75

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

PART – A (25 Marks)

- 1 What is product design?
- 2 What is meant by innovation?
- 3 What is the purpose of the project?
- 4 Explain how curiosity and imagination are related.
- 5 Define trademark.
- 6 What is meant by intellectual property rights?
- 7 Explain the importance of quality in the planning of a new product.
- 8 List few steps in the interaction between the design and testing.
- 9 Differentiate between cost control and cost reduction.
- 10 What is group technology?

PART-B (5 x 10 = 50 Marks)

- 11 Discuss the factors which contribute to successful technological innovation.
- 12 Describe Delphi technique for product innovation.
- 13 Explain the process of collection and screening of ideas for new products .
- 14 Explain the important strategies in research and new product development.
- 15 Name and explain the steps for introducing new products after evaluation.
- 16 Explain the importance of value engineering in product design.
- 17 Write **short notes** on the following:
 - a) Product Life Cycle
 - b) Concurrent Engineering

FACULTY OF ENGINEERING**B.E. 4/4 (M/P) II – Semester (Main) Examination, May 2017****Sub: Modern Machining & Forming Methods (Elective – III)****Time: 3 Hours****Max.Marks: 75****Note: Answer all questions from Part – A and any five questions from Part – B.****PART – A (25 Marks)**

- 1 Explain the process parameters of USM. 3
- 2 State the advantages and limitations of AJM. 2
- 3 Mention the desired properties of dielectric medium used in EDM. 2
- 4 Enlist the various flushing mechanisms adopted in EDM? 3
- 5 Describe briefly, the principle of Rotary machining process. 3
- 6 How Laser beam is produced in LBM? Explain. 2
- 7 Briefly explain the principle involved in PAM. 3
- 8 What do you understand by Ion etching? Explain 3
- 9 Enlist the equipment and accessories used in stretch forming process. 2
- 10 Write the applications of Water Hammer Forming. 2

PART – B (5x10 = 50 Marks)

- 11 a) Describe the process of USM with the help of a neat sketch. 5
 - b) Explain the WJM process; also mention the advantages and limitations of the process. 5
- 12 a) Sketch and explain the process of EDM mentioning its applications. 5
 - b) Discuss the process parameters of WEDM. Mention the WEDM process limitations. 5
- 13 a) Discuss the process capabilities of LBM; also mention any four applications of LBM. 5
 - b) Describe the principle involved in EBM; also write the advantages of the process. 5
- 14 a) What do you understand by 'HERF'? Write the advantages and applications of HERF. 5
 - b) Discuss Hydro Matic Forming process with a neat sketch. 5
- 15 a) Sketch different types of sketch forming. 5
 - b) Explain with sketches different methods of tube spinning.

- 16 a) Differentiate clearly between backward spinning and forward spinning. 5
b) Discuss the principle involved in Hydrostatic forming. 5
- 17 Write short notes on the following: 10
a) Transducers used in USM.
b) Hot machining process.
c) Principle of Explosive forming.

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FACULTY OF ENGINEERING**B.E. 4/4 (CSE) II – Semester (Main & Backlog) Examination, May / June 2017****Subject: Cloud Computing (Elective – III)****Time: 3 Hours
75****Max.Marks:****Note: Answer all questions from Part A. Answer any five questions from Part B.****PART – A (25 Marks)**

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|----|---|---|
| 1 | Define Cloud computing. What is the role of SOA in cloud? | 2 |
| 2 | What are the characteristics of a cloud? | 3 |
| 3 | Explain the levels of Virtualization Implementation. | 3 |
| 4 | Define & explain Memory migration. | 2 |
| 5 | Illustrate the need for an IaaS model. Mention few IaaS service providers. | 3 |
| 6 | List out the various enabling technologies for Cloud? | 2 |
| 7 | What are the security & trust barriers in cloud computing? | 3 |
| 8 | What are the 4 security improvements suggested for CryptDB. | 2 |
| 9 | Specify the various service offerings given by Microsoft in PaaS, SaaS & Reported Services? | 2 |
| 10 | List out few standards for Application Development on Cloud? | 3 |

PART – B (5x10 = 50 Marks)

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|----|---|----|
| 11 | Write a detailed note on the various service models & deployment models in a cloud. | 10 |
| 12 | a) Explain Trust management in the case of Data Center Consolidation | 5 |
| | b) Discuss the relative advantages and limitations of the different types of Virtualization. | 5 |
| 13 | Give the architecture of Google File System employed for performing Map Reduce. Write a code snippet for performing word count. | 10 |
| 14 | a) List and explain the Security and Trust Crisis in Cloud Computing. | 4 |
| | b) What are the challenges addressed by CryptDB. Specify the key ideas which addresses them. | 6 |
| 15 | Explain few standards for Messaging cloud computing. Describe the role of Web services in detail? | 10 |

- 16 a) Describe any two security mechanisms to overcome the cloud security challenges? 5
- b) Differentiate between Full and Para Virtualization achieved by Xen? 5
- 17 Write short notes on:
- a) Data Center Management Issues 3
- b) Format Preserving Encryption 3
- c) Standardization of Cloud Computing. 4

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FACULTY OF INFORMATICS**B.E. 4/4 (I.T.) II - Semester (Main & Backlog) Examination, May/June 2017****Subject : Cloud Computing (Elective – V)****Time : 3 Hours****Max. Marks: 75****Note: Answer all questions from Part-A and answer any five questions from Part-B.****PART – A (25 Marks)**

- 1 What are cloud based offerings? (2)
- 2 Explain Massively parallel processing systems. (3)
- 3 What are key characteristics of PAAS? (2)
- 4 Write about planning for capacity or Availability. (3)
- 5 List the features of VM ware. (3)
- 6 What is resource virtualization? (2)
- 7 Describe Trusted federation. (3)
- 8 What is Identity Access Management (IAM)? (2)
- 9 Describe Mobile platform virtualization. (2)
- 10 Explain the solution stacks (LAMP and LAPP). (3)

PART – B (50 Marks)

- 11 (a) What is the need of common method to communicate using the Internet protocol? (5)
- (b) Explain Server virtualization. (5)
- 12 (a) Explain the concept of software as a service. (5)
- (b) Why are Service Oriented Architecture considered a step toward cloud computing? (5)
- 13 (a) Write about different virtualization Technologies. (5)
- (b) Write the steps for migrating the virtualized environment. (5)
- 14 (a) State the different cloud security challenges. (5)
- (b) Explain Identity as a service (Inas). (5)
- 15 (a) Mention the different standards for Application developers. (5)
- (b) Write examples of End-User Access to cloud computing. (5)
- 16 (a) What is Basic Approach to Data-Center based SOA? (5)
- (b) Explain the four levels of Federation. (5)
- 17 Write short notes on the following:
 - (a) Vector processing (4)
 - (b) Secure software development Life Cycle (Sec SDLC) (3)
 - (c) Andrial Operating system (3)