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**Question Paper Code: 58A67**

B.E. / B.Tech. DEGREE EXAMINATION, NOV 2019

One credit Course

Agriculture Engineering

15UAG867 ENERGY AUDITING AND MANAGEMENT

(Regulation 2015)

Duration: 1.30 hours

Maximum: 50 Marks

Answer ALL Questions

PART A - (6 x 1 = 6 Marks)

- Which of the following is not a secondary energy source?  
(a) Electricity      (b) Thermal energy      (c) Natural gas      (d) Steam
- Energy stored in the bonds of atoms and molecules \_\_\_\_\_.  
(a) Nuclear energy      (b) Chemical energy  
(c) Thermal energy      (d) Mechanical energy
- For 1 kg of carbon \_\_\_\_ kg of oxygen is required to form CO<sub>2</sub>.  
(a) 1      (b) 12      (c) 2.67      (d) 3.66
- Viscosity of a liquid fluid is very much dependent on \_\_\_\_\_.  
(a) Pressure      (b) Pipe size      (c) Temperature      (d) Colour
- In cogeneration, the system efficiencies can go up to  
(a) 70%      (b) 80%      (c) 90%      (d) 60%
- One lux is equal to \_\_\_\_\_.  
(a) One lumen per meter      (b) One lumen per m<sup>3</sup>  
(c) One lumen per m<sup>2</sup>      (d) None of the above

PART – B (6 x 2= 12 Marks)

7. What is slip and how it is calculated?
8. Write about power factor?
9. Write about the importance of mass and energy balance?
10. Differentiate between primary and secondary energy sources?
11. How will you calculate the energy efficiency of boiler using direct method?
12. Differentiate between fire tube and water tube boiler?

PART – C (2x 16= 32 Marks)

13. (a) Calculate the electricity consumption in your home and estimate the electricity bill for 2 months? Assume the appropriate data for the calculations. (16)  
Or  
(b) Describe in detail about the classification of boilers? Write down the methodology for estimating the boiler efficiency using direct method? (16)
14. (a) Describe the methodology for lighting system energy efficiency study? (16)  
Or  
(b) Discuss in details about the classification of cogeneration systems? Enumerate the advantages and disadvantages of cogeneration systems? (16)