No. of Printed Pages : 4
Roll No. .....

180932

3rd Sem. / Elect. Engg.

Subject Non-Conventional Source of Energy

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Objectives questions. All questions are compulsory (10x1=10)

(Course Outcome/CO)

Q.1 What is the most convenient form of energy? (CO-1)

Q.2 Solar cell is made of _____ (CO-2)

Q.3 In direct combustion the biomass is burned in the presence of _____ (CO-3)

Q.4 WECS stands for _____ (CO-4)

Q.5 Geothermal Energy is renewable source of energy. (T/F) (CO-5)

Q.6 Output power of MHRD is _____ (AC/DC) (CO-6)

Q.7 practical efficiency of fuel cell is _____ (CO-7)

Q.8 OTEC stands for _____ (CO-5)

Q.9 What is most commonly used fuel in a fuel cell? (CO-7)

Q.10 Absorber plate of solar collector is made of _____ (CO-2)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts 10x2=20

Q.11 Define renewable source of energy. (CO-1)

Q.12 Define Solar Array. (CO-2)

Q.13 Write the composition of biogas. (CO-3)

Q.14 Give the names of any two vertical axis wind turbine. (CO-4)

Q.15 Define Tidal Energy. (CO-5)

Q.16 Enlist two advantages of MHD power generation. (CO-6)

Q.17 Define Trickle Charging. (CO-7)

Q.18 Enlist two disadvantages of Micro Hydro Plants. (CO-8)

Q.19 Define energy. (CO-1)

Q.20 Define Pyrolysis process. (CO-3)

Q.21 Define Mini Hydro Electric power generation. (CO-8)

Q.22 Define hybrid cycle of OTEC system. (CO-5)

SECTION-C

Note: Short answer type questions. Attempt any eight questions. 8x5=40

Q.23 Discuss the present scenario of non-conventional source of energy. (CO-1)

Q.24 Explain the working of solar furnace. (CO-2)

Q.25 Explain any two methods for obtaining biogas energy from biomass. (CO-3)

Q.26 Define wind mill and explain its working. (CO-4)

Q.27 Enlist five factor which affect suitability of site for tidel power plant. (CO-5)

Q.28 Draw and explain closed cycle MHD generator. (CO-6)

Q.29 Enlist the five applications of fuel cell. (CO-7)

Q.30 Differentiate between Mini and Micro Hydro Plants. (CO-8)

Q.31 Explain the open cycle system OTEC. (CO-5)

Q.32 Enlist five advantages of Micro Hydro Power Plants. (CO-8)

SECTION-D

Note: Long answer type questions. Attempt any three questions. 3x10=30

Q.33 Explain the generation of power by geothermal source. (CO-5)

Q.34 Discuss in brief the basic components of a wind energy conversion system. (CO-4)

Q.35 Explain the construction and working of hydrogen oxygen fuel cell. (CO-7)

Q.36 Discuss design, principle and construction details of a Box Type Solar Cooker. (CO-2)

(**Note:** Course outcome/CO is for office use only)

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Subject : Non-Conventional Source of Energy

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SECTION-A

Note: Objective type questions. All questions are compulsory [8×2=16] ~~(10×1=10)~~

(Course Outcome/CO)

Q.1 S. I unit of energy is ..... (CO-1)

Q.2 Solar cell convert solar energy into ..... energy. (CO-2)

Q.3 Write any two application of biogas. (CO-3)

Q.4 Wind mill work on the principal of.....(CO-4)

Q.5 Efficiency of geothermal power plant is more than conventional thermal plant.(T/F) (CO-5)

Q.6 MHD stands For..... (CO-6)

Q.7 Theoretical effeiciency of fuel cell is..... (CO-7)

Q.29 Explain working principal of fuel cell. (CO-7)

Q.30 Write a short note on Micro Hydro plants. (CO-8)

Q.31 Explain the various types of prime movers used for geothermal energy conversion. (CO-5)

Q.32 Enlist five disadvantages of Micro Hydro power plant. (CO-8)

SECTION-D

Note: Long answer type questions. Attempt any three questions. [2×10=20] ~~3×10=30~~

Q.33 Explain open Cycle OTEC and close cycle OTEC system in detail with program. (CO-5)

Q.34 Explain the construction and working of photovoltaic cell with diagram. (CO-2)

Q.35 Explain with diagram the construction and working of hydrogen oxygen fuel cell. (CO-7)

Q.36 Explain the various types of wind turbines in detail. (CO-4)

(Note: Course outcome/CO is for office use only)

Q.8 Name the turbine commonly used in tidal power plant. (CO-5)

Q.9 What electrolyte is commonly used in fuel cells?. (CO-7)

Q.10 Suns energy reaches on earth surface in the form of ..... (CO-2)

SECTION-B

Note: Very Short answer type questions. Attempt any ten parts [8×3=24] ~~10×2=20~~

Q.11 Define conventional source of energy (CO-1)

Q.12 Define Green house effect. (CO-2)

Q.13 Write the formula of biomass. (CO-3)

Q.14 Define Wind turbine. (CO-4)

Q.15 Define Geothermal Energy. (CO-5)

Q.16 Define MHD. (CO-6)

Q.17 Write any two applications of fuel cells. (CO-7)

Q.18 Define mini hydel project. (CO-8)

Q.19 Give the two examples of Non-Conventional Energy. (CO-1)

Q.20 Enlist two disadvantage of MHD power generation. (CO-6)

Q.21 Define anaerobic digestion wet process. (CO-3)

Q.22 Define ocean thermal energy conversion system. (CO-5)

SECTION-C

Note: Short answer type questions. Attempt any five questions. 5x8=40

Q.23 Differentiate between Commercial and non-commercial energy. (CO-1)

Q.24 How solar radiations are converted into heat? (CO-2)

Q.25 Discuss power generation by using gasifiers. (CO-3)

Q.26 Explain the basic components of wind energy conversion system. (CO-4)

Q.27 Differentiate between Geothermal Energy and Tidal Energy. (CO-5)

Q.28 Enlist the five advantages of MHD power generation system. (CO-6)

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3rd SEM / Electrical Engg.

Subject : Non Conventional Sources of Energy

Time : 3 Hrs. M.M. : 100

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

Q.1 Which of the following is a nonrenewable resources?
a) Solar b) Methane
c) Coal d) Diesel

Q.2 Photovoltaic cell converts solar energy into?
a) Heat energy b) Electric energy
c) Mechanical energy d) Chemical energy

Q.3 Biomass can be converted to?
a) Methane gas b) Ethanol
c) Bio diesel d) All of the above

Q.4 The single solar cell voltage is about _____
a) 0.2 v b) 0.5 v
c) 1.0 v d) 2.0 v

Q.5 In solar cells _____material is used
a) Copper b) Silver
c) Silicon d) None of the above

Q.6 The term biomass most often refers to_____
a) Inorganic matters
b) Organic matter
c) Chemicals
d) Ammonium compounds

Q.7 Which of the following biochemical conversion process is performed by micro-organisms?
a) Anaerobic b) Fermentation
c) Composting d) All of the above

Q.8 Which of the following method of generating electric power from sea water is more advantageous ?
a) Wave power b) Ocean power
c) Tidal power d) None of these

Q.9 Which turbine is commonly used in tidal energy
a) Francis turbine b) Pelton wheel
c) Kaplon turbine d) Gorlov turbine

Q.10 Geothermal energy is the thermal energy present
a) On the surface of the earth
b) In the interior of earth
c) on the surface of ocean
d) none of the above

SECTION-B

Note: Objective type questions. All questions are compulsory. 10x1=10

Q.11 _____is the conventional source of energy

Q.12 WECS stands for_____

Q.13 Define fuel cell

Q.14 Practical efficiency of fuel cell is _____.

Q.15 _____is produced by thermal degradation of biomass.

Q.16 Ideal EMF of a hydrogen oxygen fuel cell is _____V.

Q.17 A micro hydro power plant produces upto _____ KW of electricity using flowing stream.

Q.18 In wind turbine lift force should be _____and drag force should be _____.

Q.19 Which gas is used in MHD generator?

Q.20 Which electrolyte is commonly used in fuel cells?

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. 12x5=60

Q.21 Explain the signification of non conventional energy resources.

Q.22 Describe the construction of solar water heaters.

Q.23 How biomass conversion takes place.

Q.24 Describe in brief the basic components of wind energy conversion system.

Q.25 What is the difference between horizontal axis turbine and vertical axis turbine.

Q.26 How wind energy can be stored?

Q.27 Explain open cycle OTEC system

Q.28 What are the advantages and disadvantages of tidal energy?

Q.29 Write various advantages and disadvantages of fuel cells.

Q.30 Write a short note on 1.Lift force. 2 Drag force

Q.31 How power is generated by using gasifier

Q.32 Describe the present scenario of non conventional sources of energy.

Q.33 Write various advantages of tidal power plant.

Q.34 Explain the working of prime movers for geothermal energy conversion.

Q.35 Explain the V-I characteristics of solar cell.

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. 2x10=20

Q.36 Describe in detail about magneto hydro dynamic power generation.

Q.37 Define various methods for obtaining bio gas energy form biomass.

Q.38 Explain the methods of ocean thermal energy generation.