

Name :

Roll No. :

Invigilator's Signature :

**CS/B.TECH (CT)/SEM-8/HU(CT)-803/2012
2012**

ENERGY AND ENVIRONMENT MANAGEMENT

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

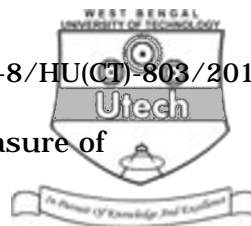
1. Choose the correct alternatives of the following :

$$10 \times 1 = 10$$

- i) Phase-wise dismantling of Administered Pricing Mechanism was started in
- | | |
|---------|----------|
| a) 1977 | b) 1987 |
| c) 1997 | d) 2007. |
- ii) Highest per capita electricity generation is registered by
- | |
|-----------------|
| a) France |
| b) Saudi Arabia |
| c) Australia |
| d) Canada. |



- iii) For production of cement maximum electricity is consumed by
- a) Crushing & Grinding
 - b) Kiln
 - c) Fans
 - d) Conveyor belts.
- iv) The most preferred fuel for glass making is
- a) coal
 - b) fuel oil
 - c) natural gas
 - d) electricity.
- v) The energy auditor's toolbox does not include
- a) lightmeter
 - b) safety equipment
 - c) thermometers
 - d) audit report format.
- vi) The size of particulate matter that is inhaled but not expelled is
- a) < 1.5 microns
 - b) < 2.5 microns
 - c) < 7.5 microns
 - d) < 10.5 microns.
- vii) The main disadvantage of fabric filter is
- a) high cost
 - b) it is not suitable generally beyond 285°C
 - c) large size
 - d) relatively low pressure drop.
- viii) A pesticide is
- a) a kind of detergent
 - b) a water purifying agent
 - c) a polluting material
 - d) a plant nutrient.



- ix) Biochemical Oxygen Demand is a measure of
- total oxydizable organic material
 - total biodegradable organic material
 - total soluble pollutants
 - total insoluble pollutants.
- x) Collection and transportation of solid urban waste constitutes about
- 25% of total cost
 - 50% of total cost
 - 75% of total cost
 - 90% of total cost.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- What are the recommendations of the committee on integrated coal policy set up by Planning Commission in 1996 to address the problems on coal sector ?
- Prepare an Energy Audit Report Format. Name some specialized audit tools and their use. $4 + 1$
- What is the basic guideline for selecting a coal for a thermal power station or a steel plant ?
- Describe how the overall efficiency of a particulate collector can be measured on the basis of fractional efficiency curve.
- Identify the basic elements of a strategic environmental management plan.



GROUP - C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Enumerate the goals of Five-Year Plans with regard to energy use up to 12th Plan ? State the recommended reform strategies to improve energy efficiency in transport sector.
 $8 + 7$
8. Draw a schematic diagram of the soda-lime-silica glass making process sections indicating approximate operating temperatures at important sections. Discuss the relationship between cullet use and energy saving. How can the amount of energy be reduced in conventional melting furnace ? Make a comparative statement about theoretical vs actual energy use in melting.
 $7 + 3 + 3 + 2$
9. What are the pollutants generated from steel plants, thermal power stations, coke-ovens and washeries ? What is the Supreme Court ruling about carrying Indian coal ? What is the contribution of coal in the energy sector in India ?
 $10 + 2 + 3$
10. Make a comparative statement on the features of ISO 14001 and ISO 9001.
11. What are primary and secondary treatment of waste water ? How is the sedimentation carried out in various sedimentation tanks ?
 $10 + 5$

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