

**B. Voc. DEGREE EXAMINATION, APRIL 2022**  
**SUSTAINABLE ENERGY MANAGEMENT**  
**SECOND SEMESTER**

**COURSE : MAJOR ELECTIVE**

**PAPER : ENERGY MANAGEMENT AND ENERGY AUDIT**

**TIME : 3 HOURS**

**MAX. MARKS :100**

**SECTION – A**

**ANSWER ALL QUESTIONS**

**(30 x 1 = 30)**

**I. CHOOSE THE CORRECT ANSWER**

1. \_\_\_\_\_ is a non-renewable source of energy.  
a) Hydel power    b) Solar power    c) Fossil fuel    d) Wind power
2. Energy management is a key component of \_\_\_\_\_ management.  
a) Nitrogen    b) Water    c) Carbon    d) Environmental
3. \_\_\_\_\_ is the main objective of energy management.  
a) Maintain optimum energy procurement and utilization    b) Minimum environmental effects  
c) Minimize energy cost    d) All the above
4. EMT programs show between \_\_\_\_\_% reduction in annual energy cost in various industrial sectors.  
a) 2 and 25    b) 3 and 20    c) 4 and 25    d) 5 and 20
5. Energy manager should have \_\_\_\_\_ skills.  
a) Managerial and commercial    b) Technical and marketing  
c) Managerial and technical    d) Manufacturing and processing
6. \_\_\_\_\_ is known as Energy consumption per unit of GDP.  
a) Energy ratio    b) Energy intensity    c) Per capita consumption    d) Energy demand
7. Which of the following is the correct meaning of a 'good' in economics?  
a) A good is an item that satisfies the needs and wants of customers  
b) A good is an item that does not look appealing to the customers  
c) A good is an item that looks appealing to the customers  
d) All of the above
8. Which of the following methods can tackle the problem of recession within an economy?  
a) Reduce the public borrowing and increase taxation  
b) Reduce the spending on government welfare projects and increase taxation  
c) Increase the public borrowing and reduce taxation  
d) Increase the spending on government welfare projects and reduce taxation

**II. EXPAND THE FOLLOWING**

9. SEC-
10. EMT-
11. CUSUM-
12. EMIS-
13. NEP-

**III. FILL IN THE BLANKS**

14. Star rating is the part of \_\_\_\_\_ program of BEE.
15. Energy that is available in the market for a definite price is \_\_\_\_\_.
16. Stock market is a \_\_\_\_\_ indicator.
17. One tonne of oil is equivalent to \_\_\_\_\_.
18. The equipment under the mandatory labeling S&L program is \_\_\_\_\_.
19. \_\_\_\_\_ is typically considered by economists to be most important measure of the economy's current health.
20. \_\_\_\_\_ has been the sole authority for fixing the price of natural gas in the country.

**IV. ANSWER IN A SENTENCE**

21. Define energy monitoring.
22. How to obtain the equipment level data?
23. Define energy security.
24. Give any two goals of EMT.
25. What is the role of "determining" in an EMT system?
26. Define designated agency.
27. State two sides of energy management.
28. Give any one energy conservation scheme.
29. Define scarcity in economic concepts.
30. What is specific energy consumption?

**SECTION – B****Answer any SIX questions:****(6x5= 30)**

31. Explain inflation with its key benefits.
32. Using block diagram, explain primary and secondary energy sources.
33. Discuss the process of Ozone Layer depletion in brief.
34. Write a short note on the energy scenario of India.
35. Explain the essential elements of a monitoring and targeting system.
36. Write a short note on sensitivity analysis.
37. Discuss briefly on how to perform an energy audit for a residential building.
38. Determine the energy consumption of a month for the following data

Device used	Wattage rating	No .of appliances used	Total Wattage	Estimated daily hours of use	Estimated daily consumption (kWh)	Estimated days in a month	Estimated monthly consumption (kWh/month)	Monthly energy cost (Rs.) <b>Unit price: Rs.3/kWh</b>
Toaster oven	1750	1	?	3	?	10	?	?

**SECTION – C****Answer any TWO questions:****(2x20 = 40)**

39. Write a detailed note on Tamil Nadu Energy Development Agency (TEDA) and electricity act 2003 with their objectives.
40. Explain the principles of energy conservation in detail.
41. Calculate

a) the total energy consumption for the following data

S.No	Name of the place		Nature of Load	Wattage (W)	Daily Hours of use	kWh consumed
1	Room 1	1	Air Cooler	1100	5	?
		2	Bulb	150	10	?
		3	Battery Inverter	200	2	?
		4	Electric Iron	350	2	?
		5	TV	100	3	?
Total Energy Consumed						?

b) Write a brief note on the regulatory measures on the excess energy consumption.

42. Write a detailed note on the following
- a) Energy Management Information System.
- b) Cumulative sum of differences.

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