

ENVIRONMENTAL STUDIES (CV307)

MODULE 3: ENERGY

1. Conventional energy source:

- a) Tidal power
- b) Coal
- c) Geothermal
- d) Biomass

Answer: b

2. Biogas production involves:

- a) Combustion
- b) Anaerobic digestion
- c) Photosynthesis
- d) Fission

Answer: b

3. Major disadvantage of fossil fuels:

- a) Zero emissions
- b) Greenhouse gas release
- c) Renewable
- d) Low energy density

Answer: b

4. Hydrogen fuel produces:

- a) CO₂
- b) H₂O
- c) SO_x
- d) NO_x

Answer: b

5. Non-conventional energy source:

- a) Natural gas
- b) Solar PV
- c) Petroleum
- d) Coal

Answer: b

6. Primary component of natural gas:

- a) Propane
- b) Methane
- c) Ethane
- d) Butane

Answer: b

7. Wind energy is converted via:

- a) Photovoltaic cells
- b) Turbines
- c) Batteries
- d) Reactors

Answer: b

8. Major environmental impact of hydropower:

- a) Air pollution
- b) Habitat fragmentation
- c) Radioactive waste
- d) Thermal pollution

Answer: b

9. Bioethanol is derived from:

- a) Coal
- b) Sugarcane/corn
- c) Crude oil
- d) Uranium

Answer: b

10. Geothermal energy exploits:

- a) Sunlight
- b) Earth's internal heat
- c) Ocean currents
- d) Wind patterns

Answer: b

11. Nuclear energy uses:

- a) Chemical reactions
- b) Fission of U-235
- c) Combustion
- d) Anaerobic digestion

Answer: b

12. Tidal energy harnesses:

- a) Wind
- b) Ocean tides
- c) River flow
- d) Solar heat

Answer: b

13. Main advantage of renewables:

- a) Depletability
- b) Low carbon emissions
- c) High land use
- d) Intermittency

Answer: b

14. Major challenge for solar power:

- a) Fuel cost
- b) Intermittency
- c) Radioactive waste
- d) Water consumption

Answer: b

15. "Energy plantation" refers to growing crops for:

- a) Food
- b) Biofuels
- c) Timber
- d) Medicine

Answer: b

16. OTEC (Ocean Thermal Energy Conversion) uses:

- a) Wave motion
- b) Temperature gradients
- c) Salinity differences
- d) Tidal currents

Answer: b

17. Most abundant renewable resource:

- a) Geothermal
- b) Solar
- c) Wind
- d) Biomass

Answer: b

18. Fuel cells generate electricity using:

- a) Combustion
- b) Electrochemical reactions
- c) Nuclear decay
- d) Friction

Answer: b

19. Main component of coal:

- a) Hydrogen
- b) Carbon
- c) Oxygen
- d) Nitrogen

Answer: b

20. Gas hydrates are potential sources of:

- a) Hydrogen
- b) Methane
- c) Helium
- d) Carbon dioxide

Answer: b

21. Which energy source has the highest capacity factor?

- a) Solar PV
- b) Nuclear
- c) Wind
- d) Tidal

Answer: b

22. "Fly ash" is a byproduct of:

- a) Hydropower
- b) Coal power
- c) Nuclear power
- d) Solar thermal

Answer: b

23. Inexhaustible energy source:

- a) Natural gas
- b) Solar
- c) Coal
- d) Uranium

Answer: b

24. Main barrier to hydrogen economy:

- a) Abundance
- b) Storage/transport
- c) Low energy density
- d) Toxicity

Answer: b

25. Energy from agricultural residue:

- a) Geothermal
- b) Biomass
- c) Nuclear
- d) Tidal

Answer: b

26. Hydraulic fracturing (fracking) raises concerns about:

- a) Increased solar reflection
- b) Groundwater contamination
- c) Enhanced geothermal activity
- d) Reduced wind patterns

Answer: b

27. Gasohol is a blend of gasoline and:

- a) Liquid hydrogen
- b) Ethanol
- c) Biodiesel
- d) Kerosene

Answer: b

28. Tidal energy generation exploits:

- a) Wind energy
- b) Gravitational pull of moon
- c) Solar thermal gradients
- d) Ocean salinity differences

Answer: b

29. Combined Heat and Power (CHP) systems improve:

- a) Water consumption
- b) Energy efficiency
- c) Nuclear waste
- d) Carbon emissions

Answer: b

30. Which is NOT a biomass energy source?

- a) Agricultural residues
- b) Uranium ore
- c) Wood chips
- d) Animal manure

Answer: b

31. OTEC (Ocean Thermal Energy Conversion) utilizes:

- a) Wave energy
- b) Temperature gradients
- c) Tidal currents
- d) Salinity differences

Answer: b

32. The main component of natural gas is:

- a) Ethane
- b) Methane
- c) Propane
- d) Butane

Answer: b

33. Fuel cells generate electricity through:

- a) Combustion
- b) Electrochemical reactions
- c) Nuclear fission
- d) Mechanical rotation

Answer: b

34. "Fly ash" is a byproduct of:

- a) Nuclear plants
- b) Coal power plants
- c) Solar farms

d) Hydropower dams

Answer: b

35. The main challenge for hydrogen economy is:

- a) Abundance
- b) Storage and transportation
- c) Low energy density
- d) Production cost

Answer: b

36. Geothermal energy exploits:

- a) Atmospheric heat
- b) Earth's internal heat
- c) Ocean surface heat
- d) Solar radiation

Answer: b

37. Bioethanol is primarily produced from:

- a) Coal
- b) Sugarcane/corn
- c) Crude oil
- d) Natural gas

Answer: b

38. The capacity factor is highest for:

- a) Solar PV
- b) Nuclear power
- c) Wind turbines
- d) Tidal generators

Answer: b

39. Gas hydrates represent potential reserves of:

- a) Hydrogen
- b) Methane
- c) Helium
- d) Carbon dioxide

Answer: b

40. Wind farms require careful siting due to:

- a) Water consumption
- b) Bird migration patterns
- c) Radioactive emissions
- d) Groundwater depletion

Answer: b

41. Solar PV panels convert:

- a) Thermal energy to electricity
- b) Sunlight to electricity

- c) Wind to electricity
- d) Geothermal to electricity

Answer: b

42. The main environmental impact of large hydropower is:

- a) Air pollution
- b) Habitat fragmentation
- c) Radioactive waste
- d) Thermal pollution

Answer: b

43. Energy plantations cultivate crops for:

- a) Food production
- b) Biofuel feedstock
- c) Timber
- d) Medicinal use

Answer: b

44. The primary advantage of renewables is:

- a) Consistent 24/7 generation
- b) Lower carbon emissions
- c) Higher energy density
- d) Minimal land use

Answer: b

45. Nuclear power generation uses:

- a) Chemical decomposition
- b) Fission of U-235
- c) Biomass combustion
- d) Tidal forces

Answer: b

46. The main component of coal is:

- a) Hydrogen
- b) Carbon
- c) Oxygen
- d) Sulfur

Answer: b

47. Which is considered inexhaustible energy?

- a) Natural gas
- b) Solar
- c) Coal
- d) Uranium

Answer: b

48. Bioenergy with Carbon Capture and Storage (BECCS) aims to:

- a) Increase fossil fuel use

- b) Achieve negative emissions
- c) Enhance radioactive decay
- d) Reduce wind energy

Answer: b

49. The primary barrier to tidal energy is:

- a) Fuel cost
- b) High infrastructure cost
- c) Radioactive waste
- d) Water consumption

Answer: b

50. Energy from agricultural residue is classified as:

- a) Geothermal
- b) Biomass
- c) Fossil fuel
- d) Nuclear

Answer: b