Review Questions for Chapters 9-11

1. The primary source of energy in much of the developing world is
A. natural gas.
B. coal.
C. peat.
D. biomass.

2. What percentage of the world's commercial energy is furnished by fossil fuels?
A. 30%
B. 50%
C. 75%
D. 90%

3. Fossil-fuel such as "peat" (peat moss) deposits are recent collections of organic material that are little changed and contain
A. 50% water.
B. 60% water.
C. 80% water.
D. 90% water.

4. Oil is transported in liquid form since it is
A. easier.
B. richer.
C. already in a pipe.
D. None of these are correct.

5. Alaska relies on oil for about _____ percent of its revenue.
A. 10%
B. 20%
C. 80%
D. 90%

6. Oil drilling in Alaska's ANWR requires specific authorization from
A. the president.
B. congress.
C. the Supreme Court.
D. None of these are correct.

7. The Middle East has about _____ percent of the world's oil reserves.
A. 90
B. 50
C. 62
D. 72

8. The Middle East and Eurasia (primarily Russia) have about 76% of the worlds
A. natural gas reserves.

B. coal reserves.
C. oil reserves.
D. peat reserves.

9. Which of the following is NOT a reason for the recent increase in the price of gasoline?
A. Petroleum stocks are low.
B. Refineries were not operating at full capacity.
C. New environmental rules are restrictive to manufacturing.
D. All of these are correct.
E. Only petroleum stocks are low and new environmental rules are restrictive to manufacturing are correct.

10. Which fossil fuel is the most abundant?
A. oil
B. natural gas
C. coal
D. All of the choices are equally abundant.

11. Ethanol is produced through the fermentation of
A. sugarcane.
B. wheat.
C. sugar beet.
D. corn.
E. All of these are correct.
F. Only sugarcane and corn are correct.
G. None of these are correct.

12. Large accumulations of decayed plant materials form which of the following resources?
A. oil
B. natural gas
C. methane gas
D. coal

13. Which is NOT a disadvantage of coal mining?
A. acid mine drainage
B. black lung disease
C. acid deposition
D. dioxin pollution

14. Which form of coal is relatively abundant and most widely used?
A. bituminous
B. lignite
C. anthracite
D. subbituminous

15. Which type of coal has the least amount of moisture and the greatest amount of fixed carbon?
A. anthracite
B. peat

C. lignite
D. bituminous

16. Which of the following processes involves removing materials from the top of a vein of coal to get to the coal beneath?
A. surface mining
B. underground mining
C. acid mine drainage
D. secondary recovery

17. Acid mine drainage occurs when
A. sulfur is released into the atmosphere during mining.
B. oxygen, water, and bacteria cause sulfur to form sulfuric acid.
C. oil is separated in a distillation tower.
D. biomass is burned to generate methane.

18. What is the name of the process whereby a platform with many wells is secured to the ocean floor?
A. off shore drilling
B. secondary recovery
C. underground mining
D. geothermal extraction

19. Liquefied natural gas is formed
A. by volatilizing hydrocarbons in gasoline.
B. by subjecting natural gas to-162 □C.
C. on the surface of oil deposits.
D. None of these are correct.

20. Hydroelectric power plants are most commonly located near
A. coal-powered plants.
B. nuclear-power plants.
C. artificial reservoirs.
D. estuaries.

21. One of the major causes of desertification is
A. demand for fuelwood.
B. drought.
C. loss of fertile soil.
D. flooding.

22. Which of the following is NOT a type of biomass?
A. animal waste
B. agricultural crops
C. fuel wood
D. solid waste

23. When waste materials, such as paper and plastics, are burned they release
A. chlorine.

B. dioxins.
C. hydrocarbons.
D. carbon dioxide.

24. Solar, geothermal, and tidal energy are forms of
A. nonrenewable resources.
B. fossil fuels.
C. renewable resources.
D. biomass.

25. Which three states in the United States have the greatest potential to use hydroelectric power?
A. New York, Pennsylvania, and Delaware
B. Washington, Oregon, and Idaho
C. New Mexico, Texas, and Oklahoma
D. Florida, Georgia, and Alabama

26. One of the most obvious environmental impacts of hydroelectric dams is
A. increased water quality.
B. radioactive contamination.
C. sulfur dioxide emissions.
D. flooding of vast areas of land.

27. Environmental problems associated with large hydroelectric dams include
A. air and water pollution and higher crime.
B. global warming, ozone destruction, and private land rights.
C. loss of forests, streams, and native peoples.
D. loss of fertile farmland, destruction of aquatic communities, and relocation of people.

28. Which country has the largest active tidal generating station?
A. France
B. United States
C. China
D. Ghana

29. In order to produce electricity using tidal power the difference between high and low tides must be at least _____ meters.
A. 2
B. 3
C. 4
D. 5

30. Environmental problems associated with geothermal energy include
A. water and noise pollution and devastation of caribou herds.
B. air pollution, corrosion of pipes, and may be toxic to fish.
C. killing of birds, noise pollution, and is very expensive.
D. being non-renewable, smells, and has large volumes of waste water.

31. Unlike batteries, fuel cells

A. run continuously and do not need to be recharged.
B. are rechargeable in very short periods of time.
C. have high emissions.
D. are extremely expensive.

32. The world's fastest growing energy resource in the 1990s was
A. oil.
B. nuclear.
C. biogas.
D. wind.

33. Environmental problems associated with wind power are:
A. vibrations causing earthquakes, air pollution, and radioactive storage.
B. transportation required over long distances and toxic to fish.
C. hazardous to birds, vibrations cause structural problems, and noise and visual pollution.
D. interrupts frog mating, mutations in mammals, and decreases available nitrogen.

34. Radioactive waste is categorized in _____ general categories.
A. 2
B. 3
C. 4
D. 5

35. Some forms of electromagnetic radiation are
A. X-rays.
B. light.
C. radio waves.
D. All of these are correct.

36. The first goal for developing nuclear energy was to
A. produce electricity.
B. test new theories in quantum physics.
C. produce bombs.
D. develop a new energy source.

37. The first controlled nuclear chain reaction occurred at Stag Field in Chicago in 1942 which lead directly to
A. atomic bombs being dropped on Japan.
B. atomic research.
C. atomic energy stoppage.
D. All of these are correct.

38. One of the greatest terrorism-related nuclear threats is from
A. nuclear power plants.
B. dirty bombs.
C. nuclear warheads.
D. None of these are correct.

39. Uranium mining and milling waste contains low levels of
A. dust.
B. hydrogen sulfide
C. fuel rods.
D. radioactive materials.

40. Public acceptance of nuclear power plants has been declining because of expensive
A. construction costs.
B. cleanup costs.
C. decommissioning costs.
D. All of these are correct.
E. Cleanup costs and decommissioning costs are correct.

41. Which of the following is NOT a part of the nuclear fuel cycle?
A. mining uranium ore
B. gas cooling of the reactor
C. fabricating fuel into fuel rods
D. enriching the uranium ore

42. All nuclear reactors contain all of the following EXCEPT
A. a fuel core.
B. a fusion breeder.
C. a reaction rate moderator.
D. a cooling mechanism.
E. All of these are correct.

43. Choose the correct sequence of steps in the nuclear fuel cycle.
A. fabrication, enrichment, reprocessing
B. mining, fabrication, enrichment
C. mining, reprocessing, enrichment
D. mining, enrichment, fabrication

44. Which of the following reactors produces heat and a new supply of the radioactive isotope, Pu-239?
A. nuclear breeder reactor
B. light-water reactor
C. boiling-water reactor
D. pressurized-water reactor

45. Waste that consists primarily of various isotopes of plutonium is referred to as
A. nuclear waste.
B. thermal pollution.
C. transuranic waste.
D. gamma radiation.

46. What is the name of the process in which the fuel is removed from a nuclear plant, its surfaces are cleaned, and people are permanently prevented from coming in contact with the building?
A. decommissioning
B. demolition

C. nuclear chain reaction
D. nuclear regulation

47. As fission occurs in a nuclear reactor the concentration of U-235 atoms
A. increases.
B. decreases.
C. remains constant.
D. converts to plutonium atoms.

48. Which one of the following processes involves increasing the U-235 content of the ore from 0.7% to 3%?
A. enrichment
B. reprocessing
C. fabrication
D. conversion

49. In which of the following are fuel rods in the core surrounded by rods of U-238 and liquid sodium?
A. gas-cooled reactor
B. nuclear breeder reactor
C. liquid metal fast-breeder reactor
D. nuclear fusion

50. Which of the following is NOT a form of energy released from nuclear disintegration?
A. alpha
B. gamma
C. beta
D. delta

51. Decommissioning involves which of the following?
A. decontaminating building surfaces
B. disposal of fuel
C. disassembly of parts
D. All of these are correct.

52. _____ is a controversial location proposed as a repository for long-term storage of nuclear waste in the United States.
A. Fargo, North Dakota
B. Carlsbad, New Mexico
C. Death Valley, California
D. Yucca Mountain, Nevada

53. Which of the following is NOT a source of radioactivity from uranium mine tailings?
A. gamma radiation
B. leaching
C. radon gas
D. None of these are correct.

54. Biological effects of ionizing radiation include

A. damage to DNA.
B. mutations.
C. damage to molecules in cells.
D. All of these are correct.

55. What radioactive isotope is generally used to fuel a controlled nuclear chain reaction?
A. uranium 95
B. cesium 137
C. barium 140
D. uranium 235

56. Radioactive waste from power plants, military facilities, and hospitals is considered
A. a type of gamma radiation.
B. low-level radioactive waste.
C. high-level radioactive waste.
D. None of these are correct.

57. Current development and construction of nuclear power plants is occurring mostly in
A. the U.S.
B. Asia.
C. South America.
D. Canada.

58. Biodiversity is a broad term used to describe the
A. diversity of genes.
B. diversity of species.
C. diversity of ecosystems.
D. All of these are correct.

59. Complete extinction occurs when
A. all individuals of a species are eliminated.
B. all species in a community merge.
C. all organisms within niche migrate.
D. All of these are correct.

60. The number one cause of extinction is
A. introduction of exotic species.
B. over hunting/fishing.
C. habitat fragmentation and loss.
D. persecution of pest organisms.

61. Extinction of a species in one area of its range is called
A. local extinction.
B. total extinction.
C. partial extinction.
D. spatial extinction.

62. Over the past few hundred years, humans have increased the species extinction rate by as much as

A. 100 times.
B. 50 times.
C. 1000 times.
D. 10 times.

63. An individual can help to control the spread of invasive species by
A. becoming informed about the issue.
B. growing native plants.
C. not releasing non-native plants, fish, or other animals into water.
D. All of these are correct.

64. Pollution _____ with population density.
A. increases
B. decreases
C. remains constant

65. Genetic diversity is influenced by which of the following?
A. migration
B. mutation
C. sexual reproduction
D. All of these are correct.

66. Waterfowl present special wildlife management problems because
A. they only eat small freshwater fish.
B. they only nest on rocky ledges.
C. they overwinter near the Arctic Circle.
D. they are migratory.

67. Sport hunting seasons are regulated to the fall so that
A. surplus animals are taken before the challenges of winter.
B. females are not able to reproduce.
C. weak juveniles are removed from the population.
D. there will be fewer females than males.

68. Many migratory waterfowl
A. hatch in Mexico and winter in Canada.
B. mate in Canada and winter in Mexico.
C. hatch in the southern U.S. and winter in the northern U.S.
D. None of these are correct.

69. What does a red-cockaded woodpecker need that it cannot get from a well-managed forest plantation?
A. insects found in snag trees
B. decaying logs on the ground for nests
C. old, diseased, living trees for nests
D. fungi growing on dead, standing trees

70. Which harvesting method allows cutting of mature trees without damaging the forest?

A. clear-cutting
B. selective harvesting
C. patchwork clear-cutting
D. seed tree harvest

71. Which of the following is NOT a technique for managing wildlife?
A. establishment of refuges
B. predator control
C. habitat management
D. introduction of exotic species

72. Which of the following factors is NOT characteristic of a species likely to become extinct?
A. low reproductive rate
B. small habitat area
C. low population density
D. generalized niche

73. Species are more likely to become extinct if they
A. have both a low population density and reproductive rate.
B. have both a high population density and reproductive rate.
C. can travel over large areas.
D. can survive in many different types of habitats.

74. Which of the following is an example of a species that is not likely to become extinct soon?
A. rabbits
B. cheetah
C. whooping crane
D. All of these are correct.

75. Which of the following causes desertification?
A. overgrazing
B. flooding
C. cutting of trees for firewood
D. overgrazing and cutting of trees for firewood

76. Which is the greatest cause of extinction?
A. pollution
B. habitat alteration
C. hunting for food
D. agriculture

77. World fish harvests have remained constant since 1989 which indicates
A. fisheries have been exploited to their capacity.
B. people have stopped eating as much fish.
C. new laws have limited fishing to protect dolphins.
D. more people are now vegetarian.

78. Environmental impacts from freshwater aquaculture include

A. introduction of heavy metals into native fish.
B. nutrient overload and escape of exotic species.
C. water loss due to increased irrigation.
D. economic loss of income from sport fishing.