

ACCRA TECHNICAL UNIVERSITY

SCHOOL OF ENGINEERING

DEPARTMENT OF MECHANICAL ENGINEERING

FIRST SEMESTER EXAMINATION 2020/2021 ACADEMIC YEAR

COURSE CODE: BME 471

COURSE TITLE: POWER PLANTS SYSTEM

TOTAL MARK: 60

TIME: 2 HRS

INDEX NUMBER

SECTION A: ANSWER ANY TWO FROM THIS SECTION

QUESTION 1: **20 Marks**

Explain the general layout of Hydro-electric power plant?

QUESTION 2: **20 Marks**

Explain the components of nuclear reactor with its well-ordered sketch?

QUESTION 3: **20 Marks**

What is the importance of draught system in thermal power plant?

SECTION B: ANSWER ALL THE MULTIPLE CHOICES

QUESTION 4: **20 Marks**

- 1. The flue gases contain various**
 - a) gases
 - b) ash
 - c) gases and ashes
 - d) none
- 2. Which one is a property of coal relevant to thermal power plant**
 - a) low ash content
 - b) high calorific value
 - c) high grinding index
 - d) all the above
- 3. Which of them are principles of site selection of a steam power station**
 - a) cost of land
 - b) public problem
 - c) future extension
 - d) all the above
- 4. Which of the statement is true**
 - i. boiler, super heater, reheater are used in steam power plant.
 - ii. boiler, super heater, reheater are not used in steam power plant.

iii. steam turbine, economiser are used in steam power plant.

- a) i and ii
- b) i and iii
- c) ii and iii
- d) none

5. Thermo-electric energy conversion is due to

- a) Emission effect
- b) Radiation
- c) Thermal energy
- d) None

6. The cheapest plant in operation and maintenance is.....

- a) Steam power plant
- b) Nuclear power plant
- c) Hydro-electric power plant
- d) None of the above

7. ____ power plants consume more fuel and exertion the environment

- a) nuclear
- b) hydro
- c) thermal
- d) gas

8. The load which is constant throughout the whole day on the power plant is known as _____

- a) base load
- b) peak load
- c) load factor
- d) load curve

9. A graph obtained between the load consumption and time is called as _____

- a) base load
- b) load curve
- c) peak load
- d) load factor

10. Photo voltaic come under

- a) wind
- b) solar heat
- c) hydro
- d) thermal gradient