ST.ANNE'S COLLEGE OF ENGINEERING AND TECHNOLOGY

CONTINUOUS INTERNAL ASSESMENT - I

GE 6251 BASICS CIVIL AND MECHANICAL ENGINEERING

Department: EEE **Semester : II**

Subject Name: Basic Civil and Mechanical Engineering

DEPARTMENT OF MECHANICAL ENGINEERING

QUESTION BANK

Sub. Name: Basic Civil and Mechanical Engineering Year/Sem: I/II

UNIT-I

PART-A (2 Marks)

1. What is surveying?
2. what is the objective of surveying?
3. what is the difference between a plan and a map?
4. what are the two major types of surveying
5. Differentiate between plane surveying and geodetic surveying?
6. How the surveying is classified based on purpose
7. State the principles of surveying.
8. What are the accessories used in chain surveying?
9. Define bearing of a line.
10. What are the systems of bearing
11. What is meant by local attraction & state its effects?
12. Define leveling and state its objectives
13. Define benchmark and state its effects
14. How rocks are classified?
15. What is quarrying & dressing of stones
16. What are the uses of stones?
17. State the uses of cement?
18. State the properties of cement concrete.
19. What is proportioning of concrete?
20. Define workability of concrete.

PART-B (16 Marks)

1. Explain with neat sketch prismatic compass and principles of compass surveying. **(16)**
2. Explain with neat sketch 20m chain and principles of chain surveying. **(16)**
3. The following staff readings were observed successively with level, the instrument having been shifted after second and fifth readings

0.870; 1.635; 2.135; 1.280; 2.980

3.125; 0.120; 1.825; 2.765; 2.015

the first reading was taken with the staff held upon a bench mark of elevation + 100.00. Enter the readings in level book and final reduced levels. Apply the usual checks. Find also the difference in level between the first and last points **(16)**

4. What are the requirements of good building stone & state important varieties of Building stones **(16)**

5 The following perpendicular offset were taken at 10 meter intervals from an Survey line to an irregular boundary line

3.145m, 4.30m, 8.20m, 5.60m,7.60m, 4.2m, 5.6m, 4.3m.

Calculate the area enclosed between the survey line, the irregular boundary line, and first and last offsets by the application of

a) Average ordinate method b) Trapezoidal rule and c) Simpson's rule **(16)**

6. What are the different types of cement? Explain the properties and uses? **(16)**

7. What are the different types of steel? Explain the properties and uses? **(16)**

UNIT-II

BUILDING COMPONENTS AND STRUCTURES

PART-A

1. State the objectives and requirements of good foundation?
2. Differentiate between shallow foundation and deep foundation.
3. Define bearing capacity of soil.
4. How the stone masonry is classified?
5. Define the following terms.

i) Corbel
ii) Cornice
iii) Coping
iv) String course
v) Through stone

6. Compare stone masonry and Brick masonry
7. Why bonding in brick wall is essential?
8. State the special features of English and Flemish bond.
9. Define beam, column and Lintel.
10. Classify the types of column based on its conditions.
11. State the purpose of plastering.
12. Define Dam, Bridge and classify them
13. What are the basic components of a bridge?
14. What is the purpose of reinforced concrete?
15. Define factor of safety.

PART-B (16 Marks)

1. a. List the six important points to be considered while selecting a site for construction of Dam.

b. Explain differential leveling with a neat sketch.

2. Explain with neat sketch the different types of piles.
3. List out the different types of bond in brick wall and explain any three in detail.
4. Draw a neat sketch of a reinforced cement concrete column and explain.
5. Explain the types of floor suitable for residential and commercial building.
6. Explain briefly the different types of pitched roof coverings.

UNIT- III

PART-A (2 Marks)

1. What are the types of power plant?
2. What are the parts of thermal power plant?
3. What is the purpose of Surge tank in hydro power plant?
4. Classify the hydro power plant.
5. What is the function of Draft tube?
6. Define Nuclear Fission. Write chain reaction.
7. What is the function of Moderator?
8. Write down the Merits and Demerits of Disel engine power plant.
9. List out the parts of the Gas turbine power plant.
10. Define Pump and Turbine.
11. Define Cavitations.
12. Define Primiming in Centrifugal Pump.
13. What is impulse turbine? Give example
14. What is Reaction turbine? Give example.

PART-B (16 Marks)

1. Explain working principle of thermal Power plant With Neat sketch. **(16)**
2. Explain working principle of Nuclear Power plant With Neat sketch. **(16)**
3. a) Explain working principle of Hydro Electric Power plant With Neat sketch. **(12)**
   b) Write its advantages and Disadvantages **(4)**
4. a) Explain working principle of Disel Engine Power plant With Neat sketch. **(12)**
   b) Write its advantages and Disadvantages **(4)**
5. a) Explain working principle of Gas turbine Power plant With Neat sketch. **(12)**
   b) Write its advantages and Disadvantages **(4)** .
6. a) With the help of a neat sketch explain the working of Reciprocating Pump **(8)**
   b) With the help of a neat sketch explain the working of Impulse Turbine **(8)**
7. a) With the help of a neat sketch explain the working of Centrifugal Pump **(8)**
   b**)** With the help of a neat sketch explain the working of Impulse Turbine **(8)**

UNIT- IV

PART-A (2 Marks)

1. What is heat engine?
2. Define I.C Engine and E.C. Engine
3. Classify the I.C engine.
4. List out the Part of the I.C. Engine
5. Define the terms: Top Dead Center, Bottom Dead Center.
6. Define the term: Compression Ratio.
7. What do you understand by Scavenging?
8. Define Boiler.
9. Classify Boilers.
10. Define fire tube boiler and water tube boiler.
11. List out the Boiler Mountings and Accessories.
12. What is the Purpose of a fusible Plug?

PART-B (16 Marks)

1. Describe the principal parts and functions of a Four Stroke Disel engine With Neat Sketch **(16)**
2. Describe the principal parts and functions of a Four Stroke Petrol engine With Neat Sketch **(16)**
3. Describe the principal parts and functions of a Two Stroke Disel engine With Neat Sketch **(16)**
4. Describe the principal parts and functions of a Two Stroke Petrol engine With Neat Sketch **(16)**
5. Describe the principal parts and functions of any one high pressure boiler With Neat Sketch **(16)**
6. Describe the principal parts and functions of Babcock Wilcox boiler With Neat Sketch **(16)**

UNIT- V

PART-A (2 Marks)
1. Define Refrigeration.
2. Define refrigerant
3. Define C.O.P.
4. Define refrigerant. Give some examples of refrigerant.
5. Give some properties of good refrigerant.
6. Mention some of the applications of refrigeration.
7. Define relative humidity
8. Define psychrometry.
9. Define DBT and WBT.
10. What is a dew point temperature?
11. Define humidity
12. Mention the classification of air conditioning system.
13. Define year–round air conditioning system

PART-B (16 Marks)
1. Explain the principle and working of vapour compression refrigeration system
2. Explain the principle and working of the vapour absorption refrigeration system
3. Give the comparison of vapour absorption with vapour compression refrigeration system
4. Explain the summer air-conditioning system for hot and dry weather
5. With the neat sketch explain the layout of a window room air conditioning
6. Explain the layout of the split type air conditioning system
7. Mention and explain the different types of refrigerant used
8. Explain the advantages and disadvantages of the window air conditioning unit