

STUCOR APP

Reg. No. :

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Question Paper Code : 70041

B.E./B.Tech. DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2022.

Second Semester

Electrical and Electronics Engineering

BE 3255 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electronics and Instrumentation Engineering/ Environmental Engineering/ Instrumentation and Control Engineering)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Say how civil engineering is closely connected to the society.
2. State any four major sub disciplines in mechanical engineering.
3. Name any two leveling instruments used for surveying.
4. What is seasoning of timber?
5. State any two shallow foundations.
6. What is a culvert?
7. What are the major components of an IC Engine?
8. Differentiate between a pump and a turbine.
9. Write the principle of an air conditioner used in our homes.
10. What are psychometric charts?

PART B — (5 × 13 = 65 marks)

11. (a) Write briefly about all the disciplines of civil engineering with reference to their structure and applications.

Or

- (b) Explain the growth of automobile engineering from invention to the current market scenario.

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12. (a) (i) Discuss the various methods of finding area of given stretch of land (6)

(ii) What are contours and how are they used in different applications. (7)

Or

(b) Discuss about different water proofing materials with respect to their types and applications.

13. (a) Differentiate between stone masonry and brick masonry and explain their types with neat sketches.

Or

(b) (i) Distinguish between state highways and national highways and state how they are managed. (6)

(ii) Classify the railways based on their gauge length and state their relative merits and demerits. (7)

14. (a) Write an essay on hydro electric power plants in India.

Or

(b) With neat diagrams explain the working of two stroke and four stroke engines.

15. (a) Explain in detail all the four stages of vapour compression refrigeration cycle.

Or

(b) Compare room air conditioner and split air conditioner with respect to construction, comfort, working and cost considerations.

PART C — (1 × 15 = 15 marks)

16. (a) As a building engineer, state the importance of plinth area, floor area, built up area and floor space index in a building assigned to you for planning and construction.

Or

(b) Considering the importance of catering to climate change, illustrate the concept of green buildings elaborately.

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Question Paper Code : 60020

B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2022

Second Semester

Electrical and Electronics Engineering

BE 3255 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electronics and Instrumentation Engineering/
Environmental Engineering/Instrumentation and Control Engineering)

(Regulations 2021)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the components of National Building Code?
2. What does Environmental engineering deals with?
3. What are the constituents of a Bricks?
4. What are the instruments used for levelling?
5. What is a culvert?
6. What are the tools used for dressing of stones?
7. What is SI engine?
8. Define Centrifugal Pump.
9. Name commonly used refrigerants.
10. What is psychrometry?

PART B — (5 × 13 = 65 marks)

11. (a) Discuss the good planning activities of Smart city infrastructure development.

Or

- (b) Discuss different methods of Roof top rainwater harvesting.

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12. (a) Show with neat sketches the characteristic features of contour lines. What are the uses of a contour map?

Or

- (b) List and discuss few physical and mechanical properties of building materials?

13. (a) Discuss any two types of foundations of a building.

Or

- (b) List the factors for the selection of a suitable site for a concrete dam.

14. (a) Discuss the differences between Fire-tube and Water-tube boilers.

Or

- (b) Discuss the layout of a steam power plant and function of each component.

15. (a) Draw the layout diagram of a typical domestic refrigerator and explain the working of its various components.

Or

- (b) Draw the layout diagram of a typical window air-conditioner and explain the working of its various components.

PART C — (1 × 15 = 15 marks)

16. (a) With suitable case study, explain in detail about the Automation Process in Automobile Industry.

Or

- (b) Explain in detail about the measurement of land with different survey instruments in real world practical condition.



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Question Paper Code : 40017

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Second Semester

Electrical and Electronics Engineering

BE 8252 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to : Electronics and Instrumentation Engineering/Environmental Engineering/Instrumentation and Control Engineering/Material Science and Engineering/B.Tech. Bio Technology/Food Technology/Pharmaceutical Technology)

(Regulations 2017)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. State the required properties of good quality sand.
2. Define Hooke's law.
3. List out the various types of surveying.
4. What are the qualities of good brick ?
5. Mention the objectives of plastering.
6. State the purpose of a dam.
7. Differentiate between boiler mountings and boiler accessories.
8. What is the use of surge tank in hydropower plants ?
9. Define the term refrigeration effect.
10. What is the function of thermostat ?

PART – B

(5×13=65 Marks)

11. a) What are the different types of cement ? Explain in detail.

(OR)

- b) Describe the various forms and sources of energy.



12. a) Explain the different properties of good building brick.
(OR)
b) What are the different types of instruments used in chain surveying ? Explain in detail.
13. a) Elaborately discuss the points to be considered while selecting a site for construction of Dam.
(OR)
b) Discuss the advantages and disadvantages of brick masonry over stone masonry.
14. a) Describe the working principle of nuclear power plant with neat sketch.
(OR)
b) Explain the following components :
a) Connecting rod
b) Crank shaft
c) Camshaft, with reference to function and material.
15. a) Discuss in detail the working of window type air conditioner with a neat sketch.
(OR)
b) i) Distinguish between vapour compression and vapor absorption refrigeration system. (10)
ii) List out the applications of refrigeration system. (3)

PART – C

(1×15=15 Marks)

16. a) i) Differentiate between four-stroke and two-stroke cycle engines. (10)
ii) Mention any five desirable properties of good refrigerant. (5)
(OR)
b) i) With an illustration explain the working of a hydroelectric power plant. (10)
ii) Draw a layout of a typical split air conditioner. (5)

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Question Paper Code : 57412

06/06/2016

B.E./B.Tech. DEGREE EXAMINATION, MAY/JUNE 2016

Second Semester

Electrical and Electronics Engineering

GE6251 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electronics and Instrumentation Engineering, Instrumentation and Control Engineering

(Regulations 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is a Pedometer ?
2. Mention two advantages of Reinforced concrete.
3. Mention two unique features of a Flemish bond.
4. Define modulus of Rigidity.
5. Differentiate between Thermal and Hydro electric power.
6. What is meant by Greenhouse effect ?
7. Define compression ratio of a IC engine.
8. Mention two disadvantages of a single jet carburettor.
9. Define Relative humidity.
10. Mention two differences between Unitary and Centralised air conditioning systems.

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PART - B (5 × 16 = 80 Marks)

11. (a) (i) Differentiate between Simple levelling and Differential levelling with sketches. (8)
(ii) State the various properties and uses of concrete. (8)
OR
- (b) (i) Brief the quality requirement of brick. (8)
(ii) Explain the necessary qualities of a good stone. (8)
12. (a) (i) A steel rod of 25 mm diameter and 1 m length is subjected to an axial pull of 100 kN. Determine the Stress, Strain and Elongation of the rod. Take $E = 2 \times 10^5 \text{ mm}^2$. (8)
(ii) Sketch and explain the various parts of a deck bridge. (8)
OR
- (b) (i) Compare the brick & stone masonries. (8)
(ii) Explain the various defects that are observed in Plastering. (8)
13. (a) (i) With a neat sketch, explain the working principle of a closed cycle gas turbine. (8)
(ii) Differentiate between Fire tube and Water tube boilers. (8)
OR
- (b) (i) With a neat sketch, explain the working principle of a Cochran Boiler. (12)
(ii) Differentiate between Impulse and Reaction Turbines. (4)
14. (a) (i) Explain the working principle of a 2 stroke diesel engine. (8)
(ii) Differentiate between Petrol and Diesel engines. (8)
OR
- (b) (i) Explain the working principle of a 2 stroke petrol engine. (12)
(ii) What are the main functions of a Carburettor. (4)
15. (a) (i) Explain the working principle of a Window air conditioner. (10)
(ii) Differentiate between Unitary and Centralized Air-conditioning systems. (6)
OR
- (b) (i) Explain the working principle of a domestic refrigerator unit. (10)
(ii) Differentiate between Vapour compression & Vapour absorption systems. (6)

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12. (a) Differentiate :
- (i) Composite masonry and composite structure
 - (ii) Stone and brick masonry
 - (iii) Plastering and pointing. (5 + 6 + 5)

Or

- (b) State the causes of failure of foundation and preventive steps to be adapted to avoid failure. (16)
13. (a) (i) Explain the working of boiling water reactor with a neat line diagram. (8)
- (ii) Compare thermal and hydro power. (8)

Or

- (b) (i) Explain the working principle of simple impulse turbine and parson's reaction turbine with relevant diagrams. (12)
- (ii) State the differences between impulse and reaction turbines. (4)
14. (a) (i) How to differentiate whether a given engine is a two stroke engine or four stroke engine? (8)
- (ii) Explain the three common working cycles of internal combustion engines. (8)

Or

- (b) (i) Compare the S.I and C.I engines in detail. (10)
- (ii) Give the applications of I.C and E.C engines. (6)
15. (a) Explain different methods of refrigeration except vapour refrigeration systems. (16)

Or

- (b) Write all the psychrometric properties and explain them in brief. (16)

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Question Paper Code : 71942

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B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2017.

Second Semester

Instrumentation and Control Engineering

GE 6251 — BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electrical and Electronics Engineering, Electronics and Instrumentation Engineering)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Enlist any four uses of stones as a building material.
2. What are the substitutes used for sand due to its scarcity?
3. State the basic requirements of a good foundation.
4. Write the various types of bridges and draw any two.
5. Distinguish boiler mountings and accessories.
6. Classify hydraulic turbines based on operating head and direction of water flow.
7. Draw the ideal and actual indicator diagrams of two stroke petrol engines.
8. Draw the sectional elevation of a four stroke petrol engine and mark the parts.
9. State the factors on which the comfort feeling of the people depends on.
10. Define tone of refrigeration.

PART B — (5 × 16 = 80 marks)

11. (a) State the characteristics of the four category of bricks and their uses. Also list the field tests that are performed on bricks. (16)

Or

- (b) What are the different varieties of cements available in the market? Brief them. (16)



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06/06/18

Question Paper Code : 41181

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B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2018

Second Semester

Electrical and Electronics Engineering

GE6251 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to : Electronics and Instrumentation Engineering/Instrumentation and Control Engineering
(Regulations 2013))

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Name the two principles of surveying.
2. How are the roofs classified in general ?
3. What is meant by 'water – cement ratio' ?
4. What are elastic materials ?
5. What is a cooling tower ? Give its uses.
6. Define steam turbine.
7. What is a four stroke engine ?
8. Define fuel injector.
9. Define COP.
10. Mention some application of refrigeration.

PART – B

(5×16=80 Marks)

11. a) i) How surveying is classified based on the objective of survey ? Name any four of them. (4)
ii) The following staff readings were observed successively with a level, the instrument having been moved after third, sixth and eighth readings.
3.150, 1.605, 0.920, 2.600, 2.900, 1.125, 0.605, 2.265 m. Calculate the R.L of points if the first reading was taken with a staff held on a bench mark of 110.00 m. Perform the usual arithmetic check. (12)

(OR)

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- b) i) What are the ingredients of cement ? State the function of the ingredients. (8)
ii) What are the requirements of good cement ? (4)
iii) State the qualities of good bricks. (4)
12. a) Describe briefly the methods for improving the bearing capacity of soils. (16)
(OR)
- b) i) Compare brick masonry and stone masonry. (12)
ii) A 200 kN compressive load was applied on a cylindrical specimen of 30 mm diameter and 200 mm length. The decrease in the length of specimen was observed as 0.4 mm. find out the stress, strain and young's modulus of the material. (4)
13. a) i) Draw a layout of a diesel power plant. State the subsystems and components of the plant and explain each one of them briefly. (12)
ii) State the advantages and disadvantages of diesel power plant. (4)
(OR)
- b) i) Describe the function of salient components of a centrifugal pump with suitable diagram. (8)
ii) Explain the working of open cycle gas turbine with suitable sketches. (8)
14. a) Explain the working principle of a diesel engine with appropriate sketches. (16)
(OR)
- b) i) Compare four stroke engines with two stroke engines. (8)
ii) What do you mean by boiler mountings ? Briefly explain their functions. (8)
15. a) Explain the important components of a simple vapour compression refrigeration system with a sketch. (16)
(OR)
- b) Discuss the window and split type room air conditioner. (16)

Reg. No. :

Question Paper Code : 53126



B.E./B.Tech. DEGREE EXAMINATIONS, APRIL/MAY 2019.

Second Semester

Electrical and Electronics Engineering

GE 6251 — BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What are the functions of theodolite survey?
2. State the basis requirements of a good building stones.
3. Write any four disadvantages of flat roofs.
4. Define stress and strain.
5. Mention the reason for preferring steam power plant to other power plants.
6. Distinguish between impulse and reaction turbine.
7. Why fuel is injected in a C.I. engine?
8. What is the use of an economizer in a high pressure boiler?
9. Give some properties of a good refrigerant.
10. Draw the layout of a window type air conditioner and mark the parts.

PART B — (5 × 16 = 80 marks)

11. (a) (i) List the types of cement and Explain the properties of ordinary Portland cement. (8)
- (ii) Explain the various properties and uses of stones. (8)

Or

- (b) (i) Explain with a neat sketch prismatic compass surveying. (8)
- (ii) What are the different types of steel? Explain the properties and uses? (8)

12. (a) (i) State the various functions of a foundation for a building. (4)
(ii) Enumerate different types of bonds used in Brick masonry. Explain them briefly. (12)

Or

- (b) (i) List the various factors to be considered while selecting a site for Construction of Dam. (10)
(ii) Describe with neat sketches of arch foundation and pile foundation. (6)
13. (a) (i) With a neat schematic diagram, explain the working principle of a thermal power plant. (12)
(ii) State the merits and demerits of a gas turbine plant. (4)

Or

- (b) (i) With the help of a neat sketch explain the working of Reciprocating Pump. (8)
(ii) What is cavitation in pumps? Explain. (8)
14. (a) (i) Describe the principal parts and functions of any one high pressure boiler with neat sketch. (8)
(ii) Write in detail about the working principle of two stroke petrol engine. (8)

Or

- (b) (i) Explain the principle of working of a four stroke Diesel engine with suitable sketches. (8)
(ii) Compare SI and CI engines with merits and demerits. (8)
15. (a) (i) With the help of flow diagram explain the principle of working of a vapour absorption refrigeration system. (8)
(ii) Give the comparison of vapour absorption with vapour compression refrigeration system. (8)

Or

- (b) (i) With a neat sketch, explain in detail the working of a split type room air Conditioner. State its merits and demerits. (12)
(ii) Discuss the advantages and disadvantages of window type room air conditioner. (4)

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- b) i) What is RCC ? What is the advantage of RCC over a cement concrete ? (4)
 ii) List the advantages of reinforced cement concrete. (2)
 iii) Write short notes on light weight concrete. (2)
 iv) What are the various classifications of mortar ? Explain. (4)
 v) List the classification and uses of steel in construction. (4)
12. a) With a sketch explain various types of foundations. (16)
 (OR)
 b) Explain briefly about masonry with neat sketch. (16)
13. a) i) Explain the working principle of steam power plant with neat sketch. (10)
 ii) Draw the layout of diesel power plant and indicate the parts. (6)
 (OR)
 b) i) Explain briefly the functions of the components of nuclear power plant. (10)
 ii) Draw a neat block diagram of a nuclear power plant and indicate the parts. (6)
14. a) Differentiate between two stroke and four stroke engines. (16)
 (OR)
 b) Explain the construction and working of 4 stroke petrol engine with suitable sketch. (16)
15. a) Sketch the layout of window air conditioner and explain working principle, stating clearly the functions of major components with merits and demerits. (16)
 (OR)
 b) With a neat layout, briefly explain about the construction and working principle of a vapour absorption refrigeration system. (16)

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Question Paper Code : 20629

R.E./E.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2018.

Second Semester

Electrical and Electronics Engineering

GE 6251 — BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

(Codes/Tables/Charts to be permitted, if any, may be indicated)

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. Write the arithmetic equation used in rise and fall method of leveling.
2. How are bricks classified?
3. Define objectives of foundations.
4. What are beams? How are beams classified depending on support?
5. What are the classifications of power plants based on renewable source of energy?
6. What is the working principle of centrifugal pump?
7. What are the basic components of I.C. engines?
8. What are the main functions of a lubricating system?
9. Write the different kinds of heat transfer modes with examples.
10. Write the classification of refrigerants with examples.

PART B — (5 × 16 = 80 marks)

11. (a) (i) The following perpendicular offsets were taken at 10 meter intervals from a survey line to an irregular boundary line : 3.60, 2.80, 4.50, 8.25, 7.85, 6.45, 5.35. Calculate the area enclosed between the survey one and the boundary line by the trapezoidal rule and the Simpson's rule. (8)
- (ii) Describe with a neat sketch of prismatic compass. (8)

Or

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

12. (a) Describe in brief about the Pile foundation with its types and sketches, and list out any four types of shallow foundation. (16)

Or

- (b) Discuss in detail about components of bridge and types of bridge with diagrams wherever needed respectively. (16)

13. (a) (i) Explain working principle of Diesel Engine Power plant With Neat sketch. (12)
- (ii) Write its advantages and disadvantages. (4)

Or

- (b) (i) With the help of a neat sketch explain the working of single acting and Double acting Reciprocating Pump. (12)
- (ii) List some difference between centrifugal pumps and reciprocating pumps. (4)

14. (a) Describe the principal parts and functions of a Four Stroke Diesel engine with neat sketch. (16)

Or

- (b) Classify boilers and describe the principal parts and functions of any one high pressure boiler with neat sketch. (16)

15. (a) With a neat layout, briefly explain about the construction and working principle of a vapor compression refrigeration system. (16)

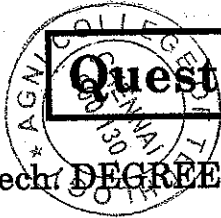
Or

- (b) List few application of air conditioning system and explain with a neat sketch the layout of a window air conditioning with merits and demerits. (16)



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Question Paper Code : 91661

B.E./B.Tech DEGREE EXAMINATIONS, NOVEMBER/DECEMBER 2019

Second Semester

Electrical and Electronics Engineering

GE 6251 – BASIC CIVIL AND MECHANICAL ENGINEERING

(Common to : Electronics and Instrumentation Engineering/Instrumentation and Control Engineering)

(Regulations – 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions

PART – A

(10×2=20 Marks)

1. Name any two properties of good cement.
2. What are the objectives of surveying ?
3. Differentiate between shallow and Deep foundation.
4. What are the qualities of good brick ?
5. Write any two merits and demerits of thermal power plant.
6. What is the function of electro-static precipitator ?
7. What is Ignition delay period ?
8. What is called direct injection type of combustion chamber ?
9. Define refrigerating effect.
10. What are the desirable properties of a refrigerant ?

PART – B

(5×16=80 Marks)

11. a) i) What are the various types of bricks based on quality ? (6)
ii) What are the sources of sand ? State the properties of good sand.
What are the functions of sand in mortar ? (10)
- (OR)
- b) Explain about different types of levelling and its limitations. (16)

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12. a) What do you understand by the term foundation ? Draw sketches to show various types of foundations. (16)

(OR)

b) i) Explain various kinds of rubble masonry with sketches. (10)

ii) Write short notes on column and its types. (6)

13. a) What is the necessity of compounding of steam turbines ? List the different types of compounding. Explain any one type of compounding with neat sketches. (16)

(OR)

b) Explain the working principle of a Nuclear power plant with neat sketch. (16)

14. a) Compare Two-Stroke and Four-Stroke engine. (16)

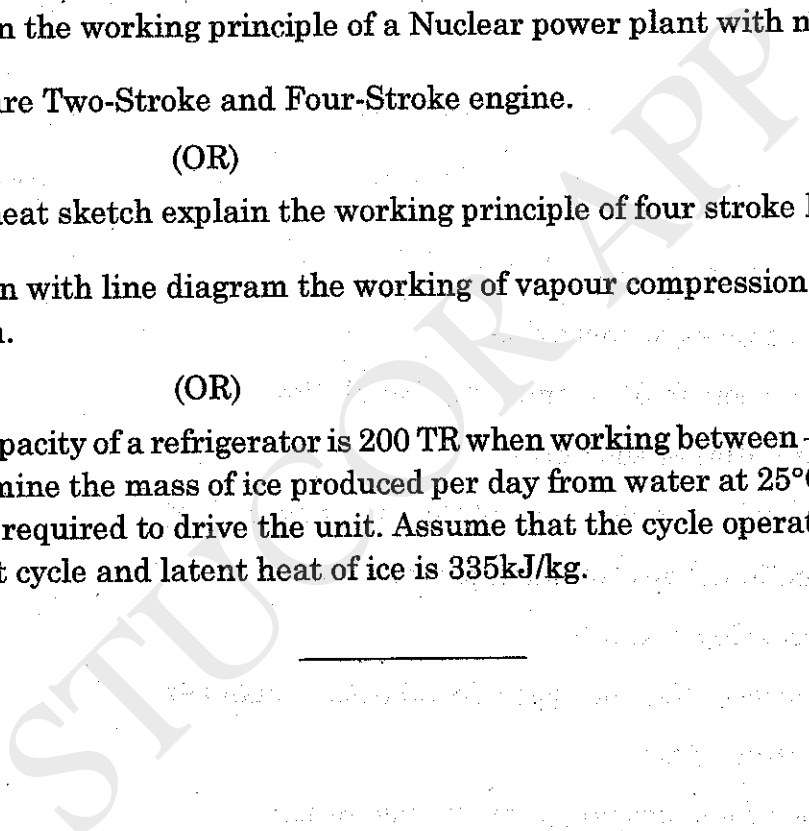
(OR)

b) With neat sketch explain the working principle of four stroke Diesel engine. (16)

15. a) Explain with line diagram the working of vapour compression refrigeration system. (16)

(OR)

b) The capacity of a refrigerator is 200 TR when working between -6°C and 25°C . Determine the mass of ice produced per day from water at 25°C . Also find the power required to drive the unit. Assume that the cycle operates on reversed Carnot cycle and latent heat of ice is 335kJ/kg . (16)



(21/11/2019)

(8)

(11)

(31)