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Question Paper Code : 37009

B.E./B.Tech. DEGREE EXAMINATION, JANUARY 2014.

First Semester

Marine Engineering

MV 6101 — BASICS OF MARINE ENGINEERING

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is meant by renewable resources of energy? Give any two examples.
2. Name any two disadvantages of power generation using fossil fuels.
3. Name the 4 strokes of a 4 stroke diesel engine.
4. What is the need of lubricant? Mention atleast two methods of applying lubrication.
5. List the main components involved in the vapour compression refrigeration system.
6. What is the need for conditioning the air?
7. Name any two types of metal joining process.
8. State the difference between hot and cold forging.
9. Name any four different types of belt drives.
10. State any four applications of ROBOT.

PART B — (5 × 16 = 80 marks)

11. (a) Write short notes on:
 - (i) Wind power
 - (ii) Solar power
 - (iii) Nuclear power and
 - (iv) Geo thermal power. (4 × 4 = 16)

Or

- (b) Sketch a Babcock and Wilcox boiler labeling all components and explain its working principles. (16)

12. (a) Classify the IC engines by their working cycle. With the help of the relevant diagrams explain the working of the IC engines in the above referred cycles. (16)

Or

- (b) Explain the term “ignition system”. With the help of relevant diagrams explain the ignition system of 4 stroke petrol engine. (16)
13. (a) Sketch and describe a vapour compression refrigeration system highlighting all the components including the working fluids. (16)

Or

- (b) Sketch the layout of an window air conditioner and explain its working principles. (16)

14. (a) Write short notes on

- (i) Drop forging
- (ii) Upset forging
- (iii) Tube drawing and
- (iv) Extrusion process.

(4 × 4 = 16)

Or

- (b) With reference to gas cutting and gas welding discuss on the following:
- (i) role of oxygen
 - (ii) type of flame used while welding
 - (iii) type of flame used while cutting
 - (iv) different type of torches. (4 × 4 =16)
15. (a) (i) Enumerate the components of a shaping machine. (6)
- (ii) Draw line sketch of shaper linkage and explain its mechanism. (10)

Or

- (b) Discuss Computer Integrated Manufacturing (CIM) with a possible flow diagram. (16)

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Question Paper Code : 57640

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

First Semester

Marine Engineering

MV 6101 – BASICS OF MARINE ENGINEERING

(Regulation 2013)

Time : Three Hours

Maximum : 100 Marks

Answer ALL questions.

PART – A (10 × 2 = 20 Marks)

1. What is the meaning of a 'Power Plant' ?
2. What is a water tube boiler ?
3. Define a 'Compression Ratio'.
4. What is an Air – Fuel ratio ?
5. What is Refrigeration principle ?
6. State two latest refrigerants.
7. What is 'Forging' ?
8. Define a Gear Train.
9. What is a chuck in a lathe ?
10. What is the use of a milling machine ?

PART – B (5 × 16 = 80 Marks)

11. (a) Write short notes on the following : (16)
- (1) Thermal energy (2) Hydel energy
(3) Solar energy (4) Wind energy

OR

- (b) Explain with a line diagram a steam power plant. (16)

12. (a) Describe a carburetor and an ignition coil of a petrol engine. (16)

OR

- (b) Draw the fresh water cooling system of a marine diesel engine & name the components. (16)

13. (a) Explain with a line sketch the vapor compression cycle refrigeration plant on a ship. (16)

OR

- (b) Explain the working principle of the thermostatic expansion valve with a sketch. (16)

14. (a) Discuss the hot as well as cold forging processes. (16)

OR

- (b) Write short notes on :

- (1) Arc welding (2) Gas welding
(3) Brazing (4) Soldering (16)

15. (a) Explain belt drive and rope drive .Mention the various uses. (16)

OR

- (b) Explain briefly the following :

- (1) CAD (2) CAM
(3) CIM (4) ROBOT (16)

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Question Paper Code : 77246

B.E./B.Tech. DEGREE EXAMINATION, APRIL/MAY 2015.

First Semester

Marine Engineering

MV 6101 — BASICS OF MARINE ENGINEERING

(Regulation 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. What is geothermal energy with reference to renewal energy?
2. What are the main differences between steam and gas turbine power plants?
3. Draw a two stroke or four stroke engine valve timing diagram.
4. What are the uses of a fuel pump in a two stroke or four stroke engines?
5. What are the types of refrigerants used for refrigeration system on board ship?
6. What is the purpose of a humidifier in an air conditioning unit?
7. How is the forging process carried out with respect to metal shaping?
8. Explain briefly the electric welding process of joining metals.
9. What are the differences between shaping and planning of metals?
10. How does CAD helpful in a manufacturing industry?

PART B — (5 × 16 = 80 marks)

11. (a) Sketch a steam turbine layout used in a power plant and name all major components. (16)

Or

- (b) Explain the problems of using fossil fuel in steam generation boilers with reference to environmental issue. (16)

12. (a) Describe the different methods of lubrication employed in a two stroke internal combustion marine engine. (16)

Or

- (b) Explain the process of combustion in a two stroke and a four stroke Engine. (16)

13. (a) Describe with a simple sketch vapour compression refrigerant system and label major parts. (16)

Or

- (b) Draw a neat sketch of a central air conditioning system and label all major components. (16)

14. (a) Name the gases employed to perform gas cutting and what are the differences between gas welding and arc welding. (16)

Or

- (b) Explain the process of metal drawing and metal extrusion. (16)

15. (a) (i) What are the various operation carried out on a lathe machine? (8)
(ii) What are the various operation carried out on a milling machine? (8)

Or

- (b) (i) Sketch a simple gear train and explain with examples. (8)
(ii) Sketch a compound gear train and explain with examples. (8)

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Question Paper Code : 80763

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2016.

First Semester

Marine Engineering

MV 6101 — BASICS OF MARINE ENGINEERING

(Regulations 2013)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A — (10 × 2 = 20 marks)

1. List a few renewable sources of energy.
2. What is co-generation?
3. Mention atleast two differences between two stroke and four stroke engines.
4. State the functions of lubrication system in an I.C engine.
5. What are the requirements of a ideal refrigerant?
6. What is thermoelectric cooling?
7. What is cold forging?
8. State the use of flux in arc welding.
9. What are reverted gear trains?
10. Define CIM.

PART B — (5 × 16 = 80 marks)

11. (a) (i) Explain the working of a steam power plant with a neat sketch. Compare its merits and demerits over a gas turbine power plant
- (ii) Discuss briefly about environmental concerns of using nuclear energy for power generation.

Or

- (b) (i) Describe the working of a Lamont boiler with a neat sketch. (10)
- (ii) Draw a neat sketch of a hydroelectric power plant and name the parts. (6)

12. (a) (i) Explain the functioning of a liquid cooling system used in multi-cylinder IC engines with a neat sketch. (10)
 (ii) Draw a schematic battery type ignition system of a multi-cylinder engine and indicate its salient features. (6)

Or

- (b) (i) Explain the operation of a four stroke diesel engine with a sketch. (10)
 (ii) State the function of
 (1) connecting rod
 (2) piston pin
 (3) cam shaft. (2+2+2)

13. (a) With a neat sketch explain the working of a vapour compression refrigeration cycle.

Or

- (b) Describe the working of summer and winter air conditioning system with sketches.

14. (a) With suitable sketches explain the following processes

- (i) Forging (ii) Rolling (iii) Extrusion. (5+5+6)

Or

- (b) (i) Explain the gas welding process with a sketch. (8)
 (ii) Describe the brazing process. Also list its merits over soldering. (6+2)

15. (a) (i) Describe the working of a centre lathe with a sketch. (10)
 (ii) Draw the schematic of a robot and indicate its various movements. (6)

Or

- (b) (i) Explain the operation of a shaping machine with a sketch. (10)
 (ii) Discuss the application of belt and rope drives to transmit mechanical power. (6)
