Q. Code: 267871

Reg. No. | | | | | | | | | | | | | |

B.E. / B.TECH. DEGREE EXAMINATIONS, MAY 2024

Seventh -Semester

MR18016 – OFFSHORE TECHNOLOGY

(Marine Engineering)

(Regulation 2018 / 2018A)

TIME: 3 HOURS **MAX. MARKS: 100**

COURSE OUTCOMES	STATEMENT	RBT LEVEL
CO 1	Student will have the knowledge of Off shore oil field, off shore installations.	**2**
CO 2	Student will have the knowledge of Off shore vessels types and its uses.	**2**
CO 3	Student will have the knowledge of Difference DP Vessels operation and its main machineries, sensors.	**2**
CO 4	Student will have the knowledge of DP Trails and test, defect analyzing.	**2**
CO 5	Student will have the knowledge of Off shore ships safe working, various ships drills, DP operations, DP trails.	**2**

PART- A (10 x 2 = 20 Marks)

(Answer all Questions)

		CO	RBT LEVEL
1.	How does the drill string and the drill bit is connected for the seabed drilling platform ships?	**1**	**2**
2.	What are the major functions of offshore mobile units?	**1**	**1**
3.	List out the advantages of cranes present in the anchor handling vessels.	**2**	**1**
4.	How the propulsion system in the tug boat differs from the ship?	**2**	**2**
5.	How does the DP vessel is able to maintain the position of the ship constantly?	**3**	**2**
6.	List a few types of thruster system used on the DP vessels.	**3**	**1**
7.	List out the advantage of azimuth thruster system.	**4**	**1**
8.	What are the two major servomotor system helps to maintain the position of the DP vessel?	**4**	**2**
9.	List a few deck gears that are used to handle cargo operation in the offshore vessel.	**5**	**1**

10.	What are the major personal protective equipment to be worn during the high-risk operation?	**5**	**2**	

PART- B (5 x 14 = 70 Marks)

		Marks	CO	RBT LEVEL
11. (a)	With the help of simple sketch explain how the oil beneath the seabed is extracted by the floating platform?	**(14)**	**1**	**2**
	(OR)			
(b)	Write a short note on	**(7)**	**1**	**2**
	a) Jack up platform	**(7)**		
	b) Semi-submersible oil rigs			
12. (a)	With the help of a neat diagram explain the operation of Voith-schneider propulsion system fitted to the tug boats.	**(14)**	**2**	**2**
	(OR)			
(b)	Sketch and describe drilling operation involved at the middle of sea by drilling vessels and discuss the difficulties faced during the operation?	**(14)**	**2**	**2**
13. (a)	Briefly explain various working principles involved in DP vessel I, II, III and discuss the how the position of the vessel is maintained?	**(14)**	**2**	**2**
	(OR)			
(b)	With the help of a simple block diagram explain the power system, thruster system and DP control system of an offshore vessel.	**(14)**	**2**	**2**
14. (a)	With help of a simple sketch explain various kinds of thruster system used on offshore vessels and discuss its merits and demerits of the same.	**(14)**	**4**	**2**
	(OR)			
(b)	Illustrate with the help of neat sketch, how the DP vessels are able to maintain its geo stationary position at the sea using hydro acoustic reference system.	**(14)**	**4**	**2**
15. (a)	Briefly Discuss the importance of adhering to safety procedures and maintaining equipment for safe and effective cargo handling.	**(14)**	**5**	**3**
	(OR)			
(b)	What are the types and significance of onboard drills conducted on offshore	**(14)**	**5**	**3**

vessels for ensuring safety and preparedness?

PART- C (1 x 10 = 10 Marks)

(Q.No.16 is compulsory)

		Marks	CO	RBT LEVEL
16.	Describe the operational benefits and drawbacks of both jet and podded propulsion systems, and recommend the best thruster system for an offshore supply vessel.	**(10)**	**3**	**5**

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