

**PARUL UNIVERSITY**  
**FACULTY OF APPLIED SCIENCE**  
**M.Sc., Summer 2022-23 Examination**

**Semester: 4**  
**Subject Code: 11214253**  
**Subject Name: Advanced Offshore Technology**

**Date: 22-03-2023**  
**Time: 2:00pm to 4:30pm**  
**Total Marks: 60**

**Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

- Q.1. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Define types of Rigs used in offshore operations.  
 (b) Describe the names of 25 components of the Rig
- Q.1. B) Answer the following questions (Any two) (04)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks)  
 1. Explain different systems used in the Rig.  
 2. Explain the different levels of computerization.  
 (b) DSA drivers (04)  
 (c) BOP & its importance (04)
- Q.2. A) Answer the following questions. (04)**  
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks)  
 1. Explain DP and its application.  
 2. Explain DGPS system.  
 (b) Compare the advantage & disadvantage of DP system & Jack up Barge. (04)
- Q.2. B) Answer the following questions (Any two) (03)**  
 (a) Short note/ Multiple choice questions. (Each of 01 marks)  
 1. Explain Oil Well Cementing.  
 2. Describe the objectives of cementing.  
 3. Describe in detail the classification of cementing.  
 (b) Explain types of Oil well cement used in the Industry. Describe squeeze cementing (03)  
 (c) Define Accelerators, Retarders & Fluid Loss reducers (03)
- Q.3. A) Essay type/ Brief note (4x2) (Each of 04 marks) (08)**  
 (a) Define Casing & its type.  
 (b) Describe Slurry design. Explain its application.
- Q.3. B) Answer the following questions (Any two) (04)**  
 (a) Short note/ Brief note (2x2)/ Schematically label the figures (2x2) (Each of 02 marks)  
 1. When cementing is required in an Oil well.  
 2. What are subsea manifolds.  
 (b) Describe various types of manifold. (04)  
 (c) Define Foundation & structure (04)
- Q.4. A) Answer the following questions. (04)**  
 (a) Short note/ Brief note (2x2)/ Fill in the blanks. (Each of 02 marks)  
 1. Define subsea production & injection system.  
 2. Sub sea well head  
 (b) Sub sea X mas tree and its advantage (04)
- Q.4. B) Answer the following questions (Any two) (03)**  
 (a) Short note/ Multiple choice questions. (Each of 01 marks)  
 1. Umbilical system for offshore operations.  
 2. Riser system Components  
 3. Mudmat.  
 (b) Riser ,Production riser & Workover riser (03)  
 (c) Define function & equipments of BOP. (03)