

Question 1.

Discuss the following headline: 'The offshore oilfield service sector is some way off from recovery'.

The student is expected to have a solid understanding of the offshore industry worldwide and provide an overview of the state of the industry, currently and over recent years.

They should recognise the correlation between oil price stability and investment decisions particularly those involving extensive exploration and production campaigns.

It is important to provide detail rather than broad statements with the following being included to maximise marks:

- Understand that most new offshore development is at the upper end of cost scale, and the reasons why.
- General understanding of capex/opex costs across a range of petroleum production sectors and how the offshore sector compares.
- Understand the large increase in offshore production costs over recent years.
- Awareness of widely differing oil field 'break-even' costs.
- Awareness of current low MODU and OSV charter rates combined with a large number of MODUs/OSVs in lay-up.
- Awareness of newbuild sector: orderbooks, delayed delivery, cancellations etc.
- Awareness of consolidation (take-overs/amalgamations) across the sector.
- Awareness of differentials across sub-sectors (ie. Exploration experiencing greater drop-off than development and production)
- General understanding of macro-economic effects: global economic growth; security threats; OPEC policy etc.

Question 2.

BIMCO SUPPLYTIME 2005 is a widely used charter party within the offshore industry.

Select FIVE clauses you consider particularly significant, discuss their relevance and any amendments you might include explaining your reasons why.

This question is testing students understanding of a widely used charter party.

Marks were awarded for the rationale in selecting a particular clause as significant and its relevance, the accuracy of describing the particular clause and the understanding demonstrated with any amendments suggested.

While the marking scheme does not feature a hierarchy of relevance in regard to clauses, it is important, in maximising marks, for the student to explain why the particular clauses chosen are considered particularly relevant.

In order to pass students needed to demonstrate their understanding of key clauses and while 'word for word' reproduction of the clauses was not essential, the accuracy had to be of a standard that would not introduce ambiguity in regard to the application of the clause.

Simply stating the clause was insufficient, and detailed explanations of the effects of a particular clause for both charter and owner, together with good examples of situations intended to be covered by a clause were key in gaining pass marks.

Question 3.

Explain FOUR of the following terms/acronyms:

- i. **IMDG Code**
- ii. **Standby Vessel**
- iii. **STCW**

- iv. EPIC
- v. Drill Water
- vi. J-Hook

Five marks available for an accurate description of each chosen term/acronym.

Question 4.

Discuss how an effective safety management environment is established and maintained within the OSV industry.

Understanding the role of the International Maritime Organisation (IMO) was important and the student had to demonstrate general awareness of IMO Conventions and industry standards and distinction between them ie. statutory/non-statutory.

IMO not a regulatory body - develops conventions and codes which when ratified are implemented and enforced by the Flag States.

Large number of IMO conventions but the key ones to include are:

SOLAS, MARPOL, STCW and SAR

ISM and ISPS are codes stipulated within SOLAS (Regulations IX and XI respectively).

ISM in particular should be explained in some detail.

IMDG Code.

Maritime Labour Convention (MLC) 2006 developed by the International Labour Organisation.

Port State Control (with the power of detention)

Industry standards (non-statutory) such as the Common Marine Inspection Document (CMID) and the Offshore Vessel Inspection Database (OVID) produced by IMCA and OCIMF respectively.

The IMO non-mandatory codes for offshore supply vessels (OSV Code) and mobile drilling units (MODU Code).

Understand role of Classification Societies and trading certificates.

Question 5.

Following a successful exploration/appraisal drilling programme a commercially viable oil field has been discovered.

Discuss the key considerations the exploration company will assess when deciding on the optimal method of production and export.

The student is required to demonstrate an understanding of the options for production installations and export facilities, and what the key factors are in determining which options to choose.

They should be aware that the key drivers of commercial viability will be the size of the field and the cost of the production/export options and recognize the importance of:

- Anticipated field life (Size of the field/production rate).
- Location relative to existing infrastructure (production and export).
- Water depth.
- Environmental conditions.

They should have a general understanding of some of the more common installations:

Tie-back to existing facility.

Fixed Platform (Steel Jacket or Concrete Gravity Base Structure (GBS)).

Compliant tower.

Tension Leg Platform.

Floating Production Systems:

Floating Storage Unit (FSU).

Floating Production Unit (FPU).

Floating Production Storage & Offloading Unit (FPSO)

Export facilities:

Pipeline infrastructure.

Shuttle tankers (FSU/FPSO/SPM)

Question 6.

Detail how the most common OSVs have evolved over the last 10 years.

Explain the reasons for the most significant developments.

The student should demonstrate awareness of the general increase in specification of PSV and AHTS and the development of these vessels into a range of MPSV/OCVs.

Key to gaining marks is including specific detail demonstrating knowledge of what current 'high spec' is rather than broad statements relating to increased/improved performance.

Examples should include general specification changes across all OSVs in addition to more specific detail for particular vessel types ie. PSV/AHTs/OCV/MPSV etc.

Some of the key drivers of enhanced specification should be included such as:

Increased operation in frontier areas as 'easy oil' is depleted.

Operations further from base/longer trips.

Deeper waters.

Harsher weather conditions.

Operation in polar areas.

Increased focus on safety.

Environmental considerations.

Fuel economy.

Proliferation of subsea development.

Question 7.

Your company has been approached by a large offshore operator seeking an exclusive broker to manage their chartering requirements.

Write an introductory letter to them explaining the benefits of selecting your company for this business.

The student must answer this question in the form of a letter to maximise their score and marks were awarded for the manner in which letter is set out and the introduction made, general company details (no. of brokers, no. of fixtures etc.)

Content was marked broadly on the following headings

- Chartering.
- Sale and Purchase.
- New Building, Bare Boat, Lease and Scrapping.
- Market Intelligence such as reports.
- Research, Consultancy.
- Local/Area Knowledge (Cabotage/Tax Regime/Local Content etc.)
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Question 8.

Answer BOTH parts of the question.

- a) **Describe the general arrangement of a semi-submersible drilling rig.**
Use diagrams to support your answer.
- b) **Explain the operational concept of these units, in particular how they maintain station and are transported both 'in field' and over longer distances.**
- (a) Sketch should provide sufficient detail to demonstrate understanding of the basic structure.
ie. sketches showing pontoons, columns, deck, derrick and topside modules.
Most rigs comprise 2no. pontoons and 4no. columns, however large modern units are constructed with 6 or 8 columns.
Usually 1 derrick, but 2 on large modern units .
Detail should include mooring arrangements and that some rigs can be self-propelled with thrusters.
- (b) General detail describing the operational functions should include:
Floating structure, can be ballasted to obtain optimum draft between transport and operational modes.
Can be self-propelled, although most units will be towed between locations.
Towed to location or transported by Heavy Lift vessels (Dry Tow).
Anchoring arrangements usually 8 (2/corner) or 12 (3/corner).
Anchors deployed/recovered by AHTS.
Can operate in deeper water than Jack-up rigs.
Modern semis operating in water depths up to 3,500m
More stable than drillships.
Deepwater operations units can be held on station by thrusters on DP. (usually DP3)
Specification advances loosely referred to as 'generations' covering around a decade, hence latest rigs termed '7th generation' from 2015 onward.
Operating Draft circa. 25m
Transit Draft circa 8m