**Экзаменационные билеты**

 **Группа 4-Р**

 **Таблица выбора номеров билетов**

|  |  |
| --- | --- |
| начальная буква фамилии | номер билета |
| А,Б,Я, В,Г,Ю | 1 |
| Д,Е,Э, Ж, З, Щ | 2 |
| И, К, Ш, Л, М | 3 |
| П,Н,О, Р,С | 4 |
| Т,У,Ф, Х,Ц,Ч | 5 |
|  |  |

 **Билет № 1**

1. Прочитайте и переведите текст на русский язык.

**BITS**

 A bit is a cutting or boring element used in drilling oil and gas wells. The bit consists of the cutting element and the circulating element. The circulating element permits the passage of drilling fluidand utilizes the hydraulic force of the fluid stream to improve drilling rates. In rotary drilling several drill collars are joined to the bottom end of the drill-pipe colomn. The bit is attached to the end of the drill collar. Most bits used in rotary drilling are roller-cone bits. Most roller-cone bits have three cones although some have two and some have four. Bit manufactures either cut teeth out of the cones or insert very hard tungsten carbide buttons into the cones.

 Jet bits have nozzles that direct a high- velocity stream or jet of drilling fluid to the sides and bottom of each cone, so that rock cuttings are, swept out of the way as bit drills. Diamond bits do not have cones; nor do they have teeth. Instead, several diamonds are embedded into the bottom and aides of the bit.

Since diamonds are so hard, diamond bits are sometimes used to efficiently drill rock formations that are quite hard. They are also used to drill soft formations effectively.

 bit - долото

 to bore - бурить

 to permit- позволять

 passage - проход, прохождение

 to join - соединять

 bottom end - нижний конец

to attach - присоединять

roller-cone bit - шарошечное долото

formation - пласт

to improve \_ улучшать

 nozzle - насадка

diamond bit - алмазное долото

1. Ответьте письменно на вопросы по теме:
2. What is bit?
3. What is it used for?
4. What elements does it consist of?
5. The circulating elements permits the passage of fluid doesn’t it?
6. What is hydraulic force used for?
7. Is the bit attached to upper part or the end of the drill collar?
8. What bits are used in rotary drilling?
9. How many cones have most roller-cone?
10. Do diamond bits have any cones?
11. Do they have any teeth?
12. Прочитайте слова и переведите их на русский язык:

To circulate, bit, end, fluid, coloumn, to cut, hard, formation, cuttings, to use, to consist of

1. Расскажите в нескольких словах о различных типах долот.

 **Билет № 2**

1. Прочитайте и переведите текст на русский язык.

 **POWER SYSTEM**

 Practically every rig uses internal combustion engines as its prime power source or its prime mover. A rig’s engine similar to the one in a car except that rig engines are bigger, more powerful and do not use gasoline as a fuel. Most rig engines today are diesels, although some are still around that burn natural or

liquefied gas as a fuel. А rig, depending on its size and how deep a hole it must drill may have from 2 to 4 engines. Naturally, the bigger the rig, the deeper it can drill and the more power it will need. Thus, the big rigs have three or four engines, Two common methods are used to transfer the power: electrical and mechanical.

 Up until a few years ago, most rigs were mechanical. Nowadays diesel-electric rigs dominate, but there are many mechanical rigs are still around.

 Diesel engines are usually located at ground level some distance away from the floor, drive large electric generators.

 The diesel-electric system has a number of advantages over mechanical system. One of them is that the engines can be placed well away from the rig floor so that engine noise for the crew is reduced.

engine - двигатель

 power - энергия

 internal combustion engine - двигатель внутреннего сгорания

 to be similar to - быть похожим

 gasoline - бензин

 to furnish - получить, образовать, создать

 liquefied gas - сжиженный газ

 thus таким образом

 crew – бригада

1. Ответьте письменно на вопросы по теме:
2. What kind of engine does every rig use?
3. How many engines may a rig have?
4. How much energy do they produce?
5. What are they located?
6. What is the main advantage of a diesel-electric system?
7. Is it important for the crew?

3, Прочитайте предложения и переведите их на английский язык:

1. На каждой буровой установке есть двигатель внутреннего сгорания.
2. Бензин в них в качестве топлива не используется.
3. Двигателей может быть несколько.
4. Есть двигатели, где используют природный и сжиженный газ в качестве топлива.

4, Расскажите в нескольких словах о системе питания буровой установки.

 **Билет № 3**

1. Прочитайте и переведите текст на русский язык.

 **DERRICK**

The drilling equipment consists essentially of a derrick, boiler, engine and power plant, and the necessary actuating machinery, tools and accessories. The derrick is the tall, tower like skeleton structure commonly found in every oil-field. These derrick vary in size according to the system of drilling equipment, the geological conditions to be dealt with and the size and depth of the well to be drilled.

 The standard derrick most commonly used has been 84 feet high, while other heights range from 64-180 feet; the highest and heaviest derricks being used in connection with rotary drilling. This height is determined from concrete foundation at the base of the derrick up to the crown block carrying the heavy crown pulley at the top of the derrick. Within recent years, steel derricks have come into general use in the oil fields, especially in connection with the rotary drilling of very deep wells which require heavy derricks and equipment. In many fields, the steel derrick has

actually displaced the wooden one.

a derrick - буровая вышка

 boiler - котел

 machinery - машинное сбор)/дование

 accessory - вспомогательный инструмент

 hoist - поднимать

to shelter - укрывать

 to employ - применять

 to deal with - иметь дело

 pulley - блок

1. Ответьте письменно на вопросы по теме:
2. What does the drilling equipment consist of?
3. What is the derrick?
4. The size of a derrick depends on the system of drilling, doesn’t it?
5. Does rotary drilling need the highest and heaviest derricks?
6. How is the height of a derrick determined?
7. What kind of derricks is used nowadays?

3, Прочитайте предложения и переведите их на английский язык:

1. Буровая вышка – это высокое сооружение, встречающееся на каждом месторождении.
2. Вышка бывает разной по размеру.
3. При роторном бурении вышки бывают самые высокие и тяжелые.
4. В последнее время вышки бывают в основном стальные.

4.Расскажите в нескольких словах о буровой вышке.

 **Билет № 4**

1. Прочитайте и переведите текст на русский язык.

 **PETROLEUM**

 Petroleum is a valuable raw material. It is a mixture of hydrocarbons. Analyses of petroleum proved that it consists of carbon and hydrogen. There are also other compounds, which contain oxygen, nitrogen and inorganic matter. The physical and chemical properties of different samples of petroleum are not uniform. These depend on the composition of oil and presence of impurities. Petroleum contains gaseous, liquid and solid hydrocarbons of different composition and properties. The color of petroleum varies considerably. Some oils may be almost colorless; others light yellow, red, green, brown and black. The odor of crude oil is also determined by its composition.. The specific gravity of crude oil is an index of its value. The lighter oils have the greater value because they contain larger quantities of gasoline and other valuable products;.

 hydrocarbon – углеводород

 nitrogen – азот

 impurity - примесь

determine - определять

 unsaturated – ненасыщенный

 gravity – плотность

 uniform – однородный

crude oil - нефть-сырец

1. Ответьте письменно на вопросы по теме:
2. What does petroleum consist of?
3. Are the chemical properties of different samples of petroleum uniform ?
4. Does petroleum have color and odor?
5. What is an index of oil value?

 3. Переведите предложения.

a)Более лёгкие нефти имеют большую ценность.

b)Нефть - ценное углеводородное сырьё.

 c)Некоторые нефти могут быть бесцветными.

 4.Расскажите в нескольких словах о нефти.

 **Билет № 5**

1. Прочитайте и переведите текст на русский язык.

 **RIG COMPONENTS**

Oil and gas production begins with a construction of a well or drilling operation. There are some methods of drilling, but rotary drilling is almost always used in industry. Making holes with a rotary rig requires not only qualified personnel, but a lot of equipment as well. In order to learn about the components it is convenient to divide them into four main systems: power, hoisting, rotating and circulating. Practically every rig uses internal combustion engine as its prime power source, or its prime mover. Every rig must have a hoisting system, which is made up of a drawworks (hoist), a mast or a derrick, the crown block, the traveling block and a wire rope. Masts and derricks have to be as strong as possible. On a deep well the string may weigh as much as 225000 kilograms (that's 225 tons). Most derricks and masts can withstand a wind load of 160 to 210 kilometers per hour.

 well - скважина

hole - скважина, отверстие

 rig – установка

 hoisting system – система подъема инструмента

 to rotate - вращать internal combustion engine – двигатель внутреннего сгорания source -источник mover - двигатель

drawworks – лебедка

 traveling block - передвижной блок

mast - мачта

derrick - вышка

 load - нагрузка

to withstand - выдерживать

2. Ответьте на следующие вопросы.

1)What is the first step in oil and gas production?

2)What method of drilling is the most popular in oil and gas industry today?

 3)What must every rig have?

4)Why do masts and derricks have to be as strong as possible?

 3. Переведите следующие предложения.

a)Существует несколько способов бурения.

b)На каждой буровой есть талевый блок.

c)Каждая вышка должна иметь талевую систему.

 d)Мачты и вышки должны быть как можно прочнее.

4.Расскажите в нескольких словах о буровой установке.