

«МУРМАНСКИЙ ГОСУДАРСТВЕННЫЙ ТЕХНИЧЕСКИЙ УНИВЕРСИТЕТ»
(ФГБОУ ВО «МГТУ»)

«ММРК имени И.И. Месяцева» ФГБОУ ВО «МГТУ»

Индивидуальное контрольное задание по дисциплине

«Иностранный язык.»

Студента _____
(Ф.И.О.)

Курс, группа Курс IV , Группа М11 – ЭСЭУ

Шифр зачетной книжки _____

Специальность 26.02.05 Эксплуатация судовых энергетических установок.

Вариант № _____

Выбранное контрольное задание по каждой дисциплине обучающемуся необходимо внести в лист задания в соответствии с перечнем заданий или вопросов и двумя последними цифрами шифра зачетной книжки.

Обучающийся обязан лист с индивидуальным контрольным заданием вклеить в контрольную работу перед сдачей ее на проверку. Без индивидуального контрольного задания контрольная работа проверяться не будет.

Таблица вариантов 1

		Последняя цифра шифра студенческого билет									
		1	2	3	4	5	6	7	8	9	0
Предпоследняя цифра шифра студенческого билета	1	10	8	2	10	2	10	8	10	8	2
	2	9	2	6	9	6	9	2	9	2	6
	3	7	5	1	7	1	7	5	7	5	1
	4	8	9	10	8	10	8	9	8	9	10
	5	6	7	7	6	7	6	7	6	7	7
	6	4	10	3	4	3	4	10	4	10	3
	7	5	3	5	5	5	5	3	5	3	5
	8	3	1	9	3	9	3	1	3	1	9
	9	2	4	4	2	4	2	4	2	4	4
	0	1	6	8	1	8	1	6	1	6	8

МЕТОДИЧЕСКИЕ УКАЗАНИЯ К ВЫПОЛНЕНИЮ КОНТРОЛЬНОЙ РАБОТЫ

Выполнение контрольного задания является одной из основных форм самостоятельной работы и завершает проработку определенных разделов и тем дисциплины, предусмотренных программой.

К работе над контрольным заданием следует приступать только после изучения и усвоения материалов соответствующих разделов и тем.

Требования к оформлению контрольной работы должны соответствовать требованиям ЕСТД и ЕСКД, ГОСТ 7.32-2001 «Система стандартов по информации, библиотечному и издательскому делу «Отчет о научно-исследовательской работе», ГОСТ 7.1-2003 «Библиографическая запись. Библиографическое описание», ГОСТ 7.82-2001 «Библиографическая запись. Библиографическое описание электронных ресурсов»:

- бумага формата А4 (210 x 297 мм) по ГОСТ 2.301;
- поля: верхнее и нижнее по 2,0 см, левое 2,5 см, правое 1 см;
- абзац (отступ) 1,25 см;
- шрифт текста Times New Roman, размер 14;
- межстрочный интервал – полуторный;
- выравнивание текста – по ширине;
- выравнивание заголовков – по центру;
- количество знаков на странице 1800, включая пробелы и знаки препинания;
- запрет режима висячих строк.

Каждая структурная часть контрольной работы: содержание, введение, главы, заключение, список использованных источников - начинается с новой страницы.

Страницы всего текста, включая приложения, должны быть пронумерованы арабскими цифрами (на титульном листе номер не ставится). Номер страницы проставляют в правом нижнем углу без точки в конце.

Объем контрольной работы составляет 15-20 страниц печатного текста.

После получения незачтенной контрольной работы необходимо внимательно изучить рецензию и все замечания преподавателя, обратить внимание на ошибки и доработать материал. Незачтенная работа выполняется заново или переделывается частично по указанию преподавателя и представляется на проверку вместе с незачтенной работой.

Контрольное задание, выполненное небрежно, с наличием грамматических ошибок, возвращается назад.

Вариант 1

1) Translate the following text:

THE ALTERNATORS

The fundamental principle on which all A. C. generators depend is that an E. M. F. is induced when a conductor is made to cut across a magnetic flux. In order to obtain an E. M. F. of suitable magnitude, many conductors in series and a strong magnetic flux are employed, while the rate of cutting is made as high as practicable.

In practice three-phase generators are the most common and a three-phase supply would be obtained by mounting three turns on the same shaft. The armature winding is placed upon the stationary element now called the stator while the field system is mounted on the rotating element, now called the rotor.

The design of alternators depends on the rotating speed at which they are to be driven. High-speed machines are small in diameter but very long axially. Slow-speed machines have large diameters and short axial length.

In slow-speed generators the rotor is large with a big number of outstanding magnets (i. e. salient poles).

In high-speed alternators the field windings are sunk into the long, flush-drum rotor and arranged to give the required number of poles.

2) Translate into Russian the following word combinations:

1. core-type transformer
2. star-delta starting
3. direct current commutating machine
4. self-excited alternating current generator
5. multi-speed motor
6. alternating-current commutator motor

3) Using the English-Russian Technical Dictionary decipher and translate the following abbreviations:

3 KV, 220 V, D, C, B, E, M, F., a-hr.

4) Translate the Complex sentences:

1. The greater the current, the stronger the field will be
2. The lower the resistance, the more current will flow and the more quickly the energy will be dissipated;
3. The stronger the magnetic field, the greater the sideways force.

5) Translate the sentences, noting the meaning of the verb should:

1. Insulating materials should be resistant to sea-air oil vapour.
2. The insulation resistance of generators and motors should be measured in warm condition, immediately after running with normal load.
3. The field winding of a shunt generator should not be opened suddenly.

6) Write about your speciality.

Вариант 2

1) Translate the following text: TRANSFORMER

A transformer is known to consist of two insulated coils of wire linked with a ring of iron. The coils are called high-voltage and low-voltage windings, or primary and secondary windings. The primary winding is connected to the source of energy, and the secondary is connected to the load. The high-voltage winding is designed for the higher voltage, and has the greater number of turns.

In order to strengthen the magnetic field passing through the coils of a transformer a closed of iron is generally used.

The iron core provides a good path for the magnetic lines of force.

Each coil consists of a number of loops of round or rectangular wire. Several strands may be used in parallel but electrically insulated from each other, from the core and from the other coil. The core consists of thin sheets of high-grade silicon steel. The thickness depends somewhat on the frequency at which the transformer is to operate.

The primary function of a transformer is to transform electrical energy from one alternating voltage to another.

From the viewpoint of their loading, ship's transformers are divided into power, lighting, instrument and special transformers.

2) Translate into Russian the following word combinations:

1. shell-type transformer
2. three-phase alternating current system
3. squirrel-cage motor
4. polyphase compound commutator motor
6. interpole field coil
6. high-resistance field winding

3) Using the English-Russian Technical Dictionary decipher and translate the following abbreviations:

15A, A. C, kV, kV/A-hr, M. S. B.

4) Translate the Complex sentences:

1. The longer the wire, the fewer electrons can pass through it in a given time.
2. The more sudden the increase of armature current, the greater will be the induced E. M. F.
8. The higher the temperature of a substance, the greater is the flow of electrons.

5) Translate the sentences, noting the modal meaning of the verb should:

1. Electric equipment should be unaffected by any water, steam and oil.
2. A starting resistance should be used to limit the current.
3. Electric machines should be installed so as to provide for easy access to the commutator, slip rings, brush gear and terminal board.

6) Write about the Russian fishing fleet.

Вариант 3

1) Translate the following instruction:

OPERATING OF GENERATORS If the generator is to be operated singly, the following procedure should then be adopted:

Insert all the resistance of the shunt field rheostat in circuit by turning the handle in the direction marked « Lower voltage*.

Close the field switch, and gradually cut out the rheostat resistance till the machine excites and builds up to normal voltage.

If the polarity is incorrect, shut down the machine and reverse the residual flux.

When the polarity and voltage are correct, close the generator circuit-breakers and then the main switch.

When shutting down, first reduce the load to a low value (but not to zero) by operating the field rheostat, then trip the circuit-breakers, open the main switch and cut-in all the field rheostat resistance. If fitted with discharge contacts and resistance, the field switch may then be opened, otherwise the speed should be reduced before opening the field switch.

This method of shutting down reduces the chance of reversed polarity.

2) Translate into Russian the following word combinations:

1. constant-voltage transformer
2. three-phase asynchronous motor
3. polyphase shunt commutator motor
4. multiply-turn coil
6. two-pole ring winding
6. full load current

3) Using the English-Russian Technical Dictionary decipher and translate the following abbreviations:

80 a-hrs, E. M. F.; K VA., 60 V, A. C.

4) Translate the Complex sentences:

1. The smaller the diameter of a wire, the greater the resistance.
2. The larger the electromotive force, the more electricity the condenser will store.
8. The higher the current in the conductor, the more the field lines are distorted and the greater the mechanical influence upon the conductor.

5) Translate the sentences, noting the modal meaning of the verb should:

1. All electrical devices and circuits should be tested under operating conditions.
2. All transformers should be installed or made in such a way as to preclude accidental touching against current-carrying parts.
3. Direct-current generators should be provided with compound winding.

6) Write about the Russia as a sea country.

Вариант 4

1) Translate the following text:

INDUCTION MOTORS Most of A. C. motors are of this type, chiefly because they are the only ones which are self-starting.

The stator windings of an induction motor are coupled direct through the control switches to the mains, and the latter have no electrical contact with the rotor. The alternating current in the stator produces an alternating magnetic field which is so connected as to give rise to a «rotating field» which cuts the rotor conductor at the speed of its rotation, and induces E. M. F. in them. When these

inductors are so connected as to allow current to flow, the stator and rotor current fields react and cause the rotor to turn.

Slip is the difference in speed between the stator field and the rotor, expressed usually as a percentage. Between certain limits the slip is approximately proportional to the load.

Squirrel-cage induction motors are the safest kind of motors since there is no danger of sparking.

The great disadvantage of the squirrel-cage motor is the low resistance of the rotor. It is, therefore, not recommended for starting against full load. Wound-rotor induction motors are employed for full-load starting.

2) Translate into Russian the following word combinations:

1. single-phase transformer
2. single-phase commutator motor with self-excitation
3. non-salient-pole synchronous machine
4. direct-current shunt-wound motor
5. high-resistance damper winding
6. no-load current

3) Using the English-Russian Technical Dictionary decipher and translate the following abbreviations:

12 V, M. S. B., kV-hrs, kVA, E. M. F.

4) Translate the Complex sentences:

1. The faster the motion of the magnet, the stronger is the flow of induced current.
2. The greater the ability of the circuit to cause voltages in itself or in neighbouring circuits, the greater is its inductance.
3. The longer the wire, the greater the resistance.

5) Translate the sentences, noting the modal meaning of the verb should:

1. All power and lighting transformers shall be protected against overloads and short-circuiting.
2. In D. C. circuits ammeters should be connected to the positive wire.
3. All electrical equipment should be constructed of durable, flame-retardant, moisture-resistant materials.

6) Speak about the electrical equipment of your ship.

Вариант 5

1) Translate the following text:

SYNCHRONOUS MOTORS

Synchronous motors exert torque only when the rotor is running at the same speed as the stator magnetic field.

The starting up of synchronous motors requires special arrangements, since they are not self-starting. However it is arranged that large ones start up as induction motors. In this case the rotor windings are so arranged that the motor will start up by induction and then at synchronous speed the rotor circuit is opened and switched on D. C. In this case the motor can carry its own excite on the same shaft. If there is a separate and adequate D. C. supply, the synchronous motor can be started up by a D. C. machine on the same shaft.

There is a very important property which makes this motor valuable to use. If the field windings of the machine are over-excited, the stator will take a leading current from the mains and tend to cancel out lag due to induction motors and other causes of low power factor. If the motor is big enough, it will be possible to lift the power factor to unity, though it is usual to run just below that value. Pumps and air compressors may also be driven with such motors.

2) Translate into Russian the following word combinations:

1. three-phase transformer
2. high-voltage direct current system
3. single-phase commutator motor with series compensating winding
4. polyphase series commutator motor
5. electric generator action
6. armature cross flux

3) Using the English-Russian Technical Dictionary decipher and translate the following abbreviations: 40 V, B. E. M. F., kV/A-hr, 20 A, D. C.

4) Translate the Complex sentences:

1. The higher the value of the load circuit resistance, the higher will be the critical value of speed and the higher will be the final voltage.
2. The higher the base speed of a shunt motor, the smaller the motor size and the lower the cost.
3. The larger the resistance, the smaller the no-load voltage.

5) Translate the sentences, noting the modal meaning of the verb should:

1. Secondary windings of all instrument current and voltage transformers should be earthed.
2. All ship's switchboards should be installed in dry and properly ventilated spaces.
3. Before the ship is placed in commission the entire electrical equipment should be tested.

6) Describe the main switchboard.

Вариант 6

1) Translate the following text:

THE ALTERNATORS

The fundamental principle on which all A. C. generators depend is that an E. M. F. is induced when a conductor is made to cut across a magnetic flux. In order to obtain an E. M. F. of suitable magnitude, many conductors in series and a strong magnetic flux are employed, while the rate of cutting is made as high as practicable.

In practice three-phase generators are the most common and a three-phase supply would be obtained by mounting three turns on the same shaft. The armature winding is placed upon the stationary element now called the stator while the field system is mounted on the rotating element, now called the rotor.

The design of alternators depends on the rotating speed at which they are to be driven. High-speed machines are small in diameter but very long axially. Slow-speed machines have large diameters and short axial length.

In slow-speed generators the rotor is large with a big π of outstanding magnets (i. e. salient poles).

In high-speed alternators the field windings are sunk into the long, flush-drum rotor and arranged to give the required number of poles.

2) Translate into Russian the following word combinations:

1. core-type transformer
2. star-delta starting
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4) Translate the Complex sentences:

1. The greater the current, the stronger the field will be
2. The lower the resistance, the more current will flow and the more quickly the energy will be dissipated;
3. The stronger the magnetic field, the greater the sideways force.

5) Translate the sentences, noting the π of the verb should:

1. Insulating materials should be resistant to sea-air oil vapour.
2. The insulation resistance of generators and motors should be measured in warm condition, immediately after running with normal load.
3. The field winding of a shunt generator should not be opened suddenly.

6) Write about your speciality.

Вариант 7

1) Translate the following text: TRANSFORMER

A transformer is known to consist of two insulated coils of wire linked with a ring of iron. The coils are called high-voltage and low-voltage windings, or primary and secondary windings. The primary winding is connected to the source of energy, and the secondary is connected to the load. The high-voltage winding is designed for the higher voltage, and has the greater number of turns.

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The iron core provides a good path for the magnetic lines of force.

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5) Translate the sentences, noting the modal meaning of the verb should:

1. Electric equipment should be unaffected by any water, steam and oil.
2. A starting resistance should be used to limit the current.
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6) Write about the Russian fishing fleet.

Вариант 8

1) Translate the following instruction:

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When shutting down, first reduce the load to a low value (but not to zero) by operating the field rheostat, then trip the circuit-breakers, open the main switch and cut-in all the field rheostat resistance. If fitted with discharge contacts and resistance, the field switch may then be opened, otherwise the speed should be reduced before opening the field switch.

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5) Translate the sentences, noting the modal meaning of the verb should:

1. All electrical devices and circuits should be tested under operating conditions.
2. All transformers should be installed or made in such a way as to preclude accidental touching against current-carrying parts.
3. Direct-current generators should be provided with compound winding.

6) Write about the Russia as a sea country.

Вариант 9

1) Translate the following text:

INDUCTION MOTORS Most of A. C. motors are of this type, chiefly because they are the only ones which are self-starting.

The stator windings of an induction motor are coupled direct through the control switches to the mains, and the latter have no electrical contact with the rotor. The alternating current in the stator produces an alternating magnetic field which is so connected as to give rise to a «rotating field» which cuts the rotor conductor at the speed of its rotation, and induces E. M. F. in them. When these

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5) Translate the sentences, noting the modal meaning of the verb should:

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2. In D. C. circuits ammeters should be connected to the positive wire.
3. All electrical equipment should be constructed of durable, flame-retardant, moisture-resistant materials.

6) Speak about the electrical equipment of your ship.

Вариант 10

1) Translate the following text:

SYNCHRONOUS MOTORS

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4. polyphase series commutator motor
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3) Using the English-Russian Technical Dictionary decipher and translate the following abbreviations: 40 V, B. E. M. F., kV/A-hr, 20 A, D. C.

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1. The higher the value of the load circuit resistance, the higher will be the critical value of speed and the higher-will be the final voltage.
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2. All ship's switchboards should be installed in dry and properly ventilated spaces.
3. Before the ship is places in commission the entire electrical equipment should be tested.

6) Describe the main switchboard.