МИНОБРНАУКИ РОССИИ

ВЛАДИВОСТОКСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ ЭКОНОМИКИ И СЕРВИСА

РАБОЧАЯ ПРОГРАММА УЧЕБНОЙ ДИСЦИПЛИНЫ

ОГСЭ.03 Иностранный язык в профессиональной деятельности

программы подготовки специалистов среднего звена

13.02.11 «Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям)»

Очная форма обучения

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Рабочая программа учебной дисциплины разработана на основе Федерального государственного образовательного стандарта по специальности 13.02.11.Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям) среднего профессионального образования программы подготовки специалистов среднего звена, утвержденного приказом Министерства образования и науки РФ № 1196 от 07 декабря 2017 года.

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Рассмотрено и одобрено на заседании цикловой методической комиссии

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1 ОБЩАЯ ХАРАКТЕРИСТИКА ПРОГРАММЫ УЧЕБНОЙ ДИСЦИПЛИНЫ

1.1 Место дисциплины в структуре основной образовательной программы

Учебная дисциплина ОГСЭ.03 Иностранный язык в профессиональной деятельности является частью общего гуманитарного и социально-экономического цикла основной образовательной программы (далее ООП) в соответствии с ФГОС СПО по специальности 13.02.11.Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям).

1.2 Цель и планируемые результаты освоения дисциплины

По итогам освоения дисциплины, обучающиеся должны продемонстрировать результаты обучения, соотнесённые с результатами освоения ООП СПО, приведенные в таблице.

Код ПК, ОК	Умения	Знания
ОК 01	Выбирать способы решения задач профессиональной деятельности, применительно к различным контекстам.	Приемы аннотирования, реферирования и перевода специализированной литературы по профилю подготовки. Лексика по профилю подготовки.
ОК 02	Осуществлять поиск, анализ и интерпретацию информации, необходимой для выполнения задач профессиональной деятельности.	Чтение, письмо, восприятие речи на слух и воспроизведение иноязычного текста по ключевым словам или по плану. Приемы структурирования информации.
ОК 03	Планировать и реализовывать собственное профессиональное и личностное развитие.	Способы самостоятельной оценки и совершенствования уровня знаний по иностранному языку. Особенности произношения на иностранном языке. Возможные траектории профессионального развития и самообразования.
ОК 04	Работать в коллективе и команде, эффективно взаимодействовать с коллегами, руководством, клиентами.	Основы проектной деятельности. Основы эффективного сотрудничества в коллективе.
ОК 05	Осуществлять устную и письменную коммуникацию на государственном языке с учетом особенностей социального и культурного контекста.	Правила устной и письменной коммуникации при переводе с иностранного языка. Лексика по профилю подготовки.
ОК 06	Проявлять гражданско-патриотическую позицию, демонстрировать осознанное поведение на основе традиционных общечеловеческих	Основные правила поведения и речевого этикета в сферах повседневного, официально-делового и профессионального общения. Лексика в данной области.

	ценностей.	
ОК 07	Содействовать сохранению окружающей среды, ресурсосбережению, эффективно действовать в чрезвычайных ситуациях.	Правила экологической безопасности и ресурсосбережения при ведении профессиональной деятельности. Лексика в данной области.
ОК 08	Использовать средства физической культуры для сохранения и укрепления здоровья в процессе профессиональной деятельности и поддержание необходимого уровня физической подготовленности.	Основы здорового образа жизни. Лексика в данной области.
ОК 09	Использовать информационные технологии в профессиональной деятельности.	Современные средства и устройства информатизации и их использование. Правила работы на компьютере и оргтехнике. Правила ведения переписки по электронной почте.
ОК 10	Пользоваться профессиональной документацией на государственном и иностранном языке.	Правила чтения текстов профессиональной направленности на иностранном языке. Правила построения простых и сложных предложений на профессиональные темы. Основные общеупотребительные глаголы. Лексика, относящаяся к описанию предметов, средств и процессов профессиональной деятельности. Правила оформления документов.
ОК 11	Планировать предпринимательскую деятельность в профессиональной сфере.	Лексический минимум и нормы речевого поведения и делового этикета для построения устной и письменной речи на иностранном языке. Правила ведения деловой переписки. Работа с бизнес статьями на иностранном языке с целью извлечения и переработки информации, ведения переговоров в деловой среде.
ПК 1.1	Анализировать техническое задание на разработку конструкции типовых деталей, узлов изделия и оснастки.	Перевод со словарём основной терминологии по профилю подготовки.
ПК 1.4	Применять информационно-коммуникационные технологии для обеспечения жизненного цикла технической документации.	Перевод со словарём основной терминологии по профилю подготовки. Правила оформления документов.

ПК 2.1	Анализировать конструкторскую документацию.	Перевод, обобщение и анализ специализированной литературы по профилю подготовки.
ПК 4.2	Осуществлять испытания нового сложного электрического и электромеханического оборудования с электронным оборудованием.	Перевод со словарём основной терминологии по профилю подготовки.

2 СТРУКТУРА И СОДЕРЖАНИЕ УЧЕБНОЙ ДИСЦИПЛИНЫ

2.1 Объем учебной дисциплины и виды учебной работы

Вид учебной работы	**Объем часов**
Объем образовательной программы	199
в том числе:	
практические занятия	170
Самостоятельная работа	21
Консультации	8
Промежуточная аттестация	
Итоговая аттестация в форме дифференцированного зачета	

2.2. Тематический план и содержание учебной дисциплины

Наименование разделов и тем	Содержание учебного материала и формы организации деятельности обучающихся	Объем в часах	Коды компетенций, формированию которых способствует элемент программы
1	**2**	**3**	
Раздел 1. Вводно-коррективный курс.		**10**	
Тема 1.1. Изучение иностранных языков. Этикет. О себе.	**Содержание учебного материала**		ОК 01, ОК 02, ОК 04, ОК 05, ОК 06, ОК 07, ОК 09
	Фонетический материал: Повторение основных правил чтения и произношения.		
	Лексический материал: Изучение иностранных языков. Страна изучаемого языка: Великобритания. Этикет: благодарность, извинение, прием гостей. Моя семья и я.		
	Грамматический материал: - структура английского предложения; - виды предложений. -типы вопросов		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Развитие монологической и диалогической речи.	**2**	
	Работа с текстом по теме.	**2**	
	Аудирование	**2**	
Раздел 2. Основной курс.		**134**	
Тема 2.1. Из истории электричества**.**	**Содержание учебного материала**		ОК 01, ОК 02, ОК 03,ОК 04, ОК 05, ОК 06, ОК 07, ОК08, ОК 09
	Лексический материал: Электричество. Алессандро Вольта.		
	Грамматический материал: - простые нераспространенные и распространенные предложения; - личные и притяжательные местоимения;		

	- употребление с существительным артикля (a/an, the); - образование множественного числа существительных; - притяжательный падеж существительных.		ПК 4.2
	В том числе, практических занятий и лабораторных работ	**8**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме. Аудирование.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
Тема 2.2. Энергия**.**	**Содержание учебного материала**		ОК 01-09 ПК 4.2
	Лексический материал по теме: Энергия. Солнечная энергия. Полупроводники.		
	Грамматический материал: - глагол, основные формы глагола; - спряжение глагола to be; - спряжение глагола to have;		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи	**2**	
	Выполнение грамматических тестов.	**2**	
	Развитие монологической и диалогической речи.	**2**	
	Аудирование.	**2**	
Тема 2.3. Проводники**.**	**Содержание учебного материала**		ОК 01, ОК 02, ОК 03,ОК 04, ОК 05, ОК 06, ОК 07, ОК 09 ПК 1.1, ПК 1.4
	Лексический материал: Основные инструменты.		
	Грамматический материал: - местоимения (указательные, вопросительно-относительные, неопределённые); - числительные – порядковые и количественные		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение грамматических тестов.	**2**	
	Аудирование.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
Тема 2.4. Электричество**.**	**Содержание учебного материала**		ОК 01-10 ПК 1.1, ПК 1.4
	Лексический материал: Потребление электричества. Мастерские.		

	Грамматический материал: - времена группы Simple - имя прилагательное и степени сравнения прилагательных; - наречие и степени сравнения наречий.		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов	**2**	
	Аудирование.	**2**	
Тема 2.5. Типы тока**.**	**Содержание учебного материала**		ОК 01, ОК 02, ОК 04, ОК 05, ОК 06, ОК 07, ОК 09,ОК 10 ПК 2.1 ПК 4.2
	Лексический материал: Переменный и постоянный ток.		
	Грамматический материал: - времена группы Continuous; - виды вопросительных предложений и порядок слов в них;		
	В том числе, практических занятий и лабораторных работ	**10**	
	Работа с текстом по теме.	**2**	
	Выполнение грамматических тестов.	**2**	
	Развитие монологической и диалогической речи.	**2**	
	Аудирование.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
Тема 2.6. Изоляторы.	**Содержание учебного материала**		ОК 01, ОК 02, ОК 04, ОК 05, ОК 06, ОК 07, ОК 09, ОК 10 ПК 2.1 ПК 4.2
	Лексический материал: Проводники. Изоляторы.		
	Грамматический материал: - конструкция to be going to do smth.; - пассивный залог-настоящее время; - пассивный залог-прошедшее время;		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
	Развитие монологической и диалогической речи.	**2**	

Тема 2.7. Электрическая цепь.	**Содержание учебного материала**		ОК 01-11 ПК 2.1 ПК 4.2
	Лексический материал: Последовательная цепь. Параллельная цепь. Короткое замыкание. Течение тока. Повреждение кабеля.		
	Грамматический материал: - понятие прямая и косвенная речь; - косвенная речь: сообщение; - правило согласования времён.		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
	Развитие монологической и диалогической речи.	**2**	
	Аудирование.	**2**	
Тема 2.8. Знаменитые изобретатели.	**Содержание учебного материала**		ОК 01, ОК 02, ОК 03, ОК 04, ОК 05, ОК 06, ОК 07, ОК 09, ОК 10, ОК 11 ПК 1.1, ПК 2.1, ПК 4.2
	Лексический материал: Открытия. Томас Эдисон. Майкл Фарадей. Джеймс Максвелл.		
	Грамматический материал: - времена группы Perfect - предложения с -wish.		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
	Аудирование.	**2**	
Тема 2.9. Электрические приборы Дом. Квартира.	**Содержание учебного материала**		ОК 01-11 ПК 1.1, ПК 1.4, ПК 2.1, ПК 4.2
	Лексический материал: Мой дом. Электрические приборы.		
	Грамматический материал: - модальные глаголы- can/must/should/may - эквиваленты модальных глаголов;		
	В том числе, практических занятий и лабораторных работ	**8**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	

	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
Тема 2.10. Резисторы.	**Содержание учебного материала**		ОК 01, ОК 02, ОК 03, ОК 04, ОК 05, ОК 09, ОК 10 ПК 1.1, ПК 1.4, ПК 2.1, ПК 4.2
	Лексический материал: Величина сопротивления. Мощность. Удельное сопротивление.		
	Грамматический материал: - инфинитив; - сложное дополнение (complex object); - сложное подлежащее (complex subject).		
	В том числе, практических занятий и лабораторных работ	**8**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение грамматических тестов.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
Тема 2.11. Трансформаторы.	**Содержание учебного материала**		ОК 01, ОК 02, ОК 03, ОК 04, ОК 05, ОК 06, ОК 07, ОК 09, ОК 10, ОК 11 ПК 2.1,ПК 4.2
	Лексический материал: Источник питания. Прибор. Выходное напряжение. Постоянный ток.		
	Грамматический материал: - сопоставление времен Present Simple и Present Continuous; - сопоставление времен Past Simple и Past Continuous; - сопоставление времён Past Simple и Present Perfect; - сопоставление времён Past Simple и Past Perfect;		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
	Развитие монологической и диалогической речи.	**2**	
Тема 2.12. Конденсаторы.	**Содержание учебного материала**		ОК 01-11 ПК 2.1,ПК 4.2
	Лексический материал: Изолятор. Конденсатор. Колебания. Обратное напряжение.		
	Грамматический материал: - причастие I; - причастие II;		

	- конструкции с причастием; - герундий; -функции герундия - простые и сложные предложения; - основные типы придаточных предложений.		
	В том числе, практических занятий и лабораторных работ	**12**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
	Развитие диалогической речи.	**2**	
	Аудирование.	**2**	
Тема 2.13. Метрическая система.	**Содержание учебного материала**		ОК 01, ОК 02, ОК 04, ОК 05, ОК 06, ОК 07, ОК 08, ОК 09, ОК 10, ОК 11 ПК 4.2
	Лексический материал: Метрическая система мер и весов. Международные стандарты.		
	Грамматический материал: - союзы и союзные слова; -предложения с союзами neither…nor; -предложения с союзами either…or.		
	В том числе, практических занятий и лабораторных работ	**10**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение грамматических тестов.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Аудирование	**2**	
Тема 2.14. Роль технического прогресса. Знания, умения и навыки электромеханика.	**Содержание учебного материала**		ОК 01-11 ПК 1.1,ПК 1.4, ПК 2.1, ПК 4.2
	Лексический материал: Технический прогресс и его роль в жизни человека. Современная техника. Основные инструменты. Проводники и изоляторы.		
	Грамматический материал: -сослагательное наклонение; -употребление сослагательного наклонения; - времена Present Simple, Present Continuous, Present Perfect и Present Perfect Continuous; - времена Past Simple, Past Continuous, Past Perfect и Past Perfect Continuous; - времена FutureSimple, Future Continuous, Future Perfect и Future Perfect Continuous;		

	- систематизация знаний о временах действительного залога.		
	В том числе, практических занятий и лабораторных работ	**8**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Аудирование.	**2**	
Раздел 3**.** Деловой английский язык.		**18**	ОК 01, ОК 02, ОК 03, ОК 04, ОК 05, ОК 06, ОК 07, ОК 09, ОК 10, ОК 11 ПК 1.1,ПК 1.4, ПК 2.1
Тема 3.1. Профессиональная деятельность специалиста.	**Содержание учебного материала**		
	Лексический материал: Официальная и неофициальная переписка. Виды писем. Правила оформления писем. Телефонные звонки. Деловые встречи. Переговоры. Составление и заполнение документов.		
	Грамматический материал: - повторение времён страдательного залога; - времена Future –in-the-Past; - повторение правила согласования времён; - систематизация знаний о косвенной речи; - пунктуация.		
	В том числе, практических занятий и лабораторных работ	**8**	
	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Выполнение грамматических тестов.	**2**	
Тема 3.2. Поездка за границу.	**Содержание учебного материала**		ОК 01-11
	Лексический материал: Деловая поездка за границу. Оформление визы. На вокзале. В аэропорту. В гостинице. В ресторане. Покупка сувениров. Путешествия.		
	Грамматический материал: - словообразование; - предлоги и их употребление; - фразовые глаголы; - употребление инфинитива и инфинитивных оборотов в разговорной речи; - распознавание и употребление в речи изученных ранее коммуникативных и структурных типов предложения.		
	В том числе, практических занятий и лабораторных работ	**10**	

	Введение лексики. Актуализация лексики в упражнениях.	**2**	
	Работа с текстом по теме.	**2**	
	Выполнение упражнений на развитие лексико-грамматических навыков, навыков устной речи.	**2**	
	Развитие монологической и диалогической речи.	**2**	
	Аудирование	**2**	
Консультации		**8**	
Самостоятельная работа		**29**	
Всего:		**199**	
Промежуточная аттестация		**6**	

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3. УСЛОВИЯ РЕАЛИЗАЦИИ ПРОГРАММЫ УЧЕБНОЙ ДИСЦИПЛИНЫ

3.1 Материально-техническое обеспечение

Для реализации программы учебной дисциплины предусмотрено наличие следующих специальных помещений:

Оборудование учебного кабинета:

- посадочные места по количеству обучающихся;
- рабочее место преподавателя;
- комплект учебно-наглядных пособий «Страноведение»;
- грамматические таблицы;
- дидактические материалы;
- пособия для мультимедийного оборудования.
- методические рекомендации по созданию презентаций
-методические рекомендации по грамматике английского языка

Технические средства обучения:

Мультимедийный комплект (проектор CASIO XJ-V2, экран LUMIEN Eco Picture) – 1 шт., персональный компьютер Lenovo ThinkCentre – 21 шт., наушники Sanako SLHO7 – 21 шт., колонки Microlab 2.0 SOLO4C – 1 шт., стол – 21 шт., стул – 21 шт.

Лицензионное программное обеспечение:

ОС Windows 10, Microsoft Office 10, Nibelung 3.8, Toefl, словари – Multitran, ABBYY Lingvo

3.2 Информационное обеспечение реализации программы

Для реализации программы учебной дисциплины библиотечный фонд ВГУЭС укомплектован печатными и электронными изданиями.

Обучающиеся из числа инвалидов и лиц с ограниченными возможностями здоровья обеспечены печатными и (или) электронными образовательными ресурсами в формах, адаптированных к ограничениям их здоровья.

Основная литература

1. Байдикова, Н. Л. Английский язык для технических направлений (B1–B2) : учебное пособие для среднего профессионального образования / Н. Л. Байдикова, Е. С. Давиденко. — Москва : Издательство Юрайт, 2020. — 171 с. — (Профессиональное образование). — ISBN 978-5-534-10078-5. — Текст : электронный // ЭБС Юрайт [сайт]. — URL: https://urait.ru/bcode/455909

2. Буренко, Л. В. Грамматика английского языка. Grammar in Levels Elementary – Pre-Intermediate : учебное пособие для среднего профессионального образования / Л. В. Буренко, О. С. Тарасенко, Г. А. Краснощекова ; под общей редакцией Г. А. Краснощековой. — Москва : Издательство Юрайт, 2020. — 227 с. — (Профессиональное образование). — ISBN 978-5-9916-9261-8. — Текст : электронный // ЭБС Юрайт [сайт]. — URL: https://urait.ru/bcode/452909

3. Кузьменкова, Ю. Б. Английский язык для технических колледжей (A1) : учебное пособие для среднего профессионального образования / Ю. Б. Кузьменкова. — Москва : Издательство Юрайт, 2020. — 207 с. — (Профессиональное образование). — ISBN 978-5-534-12346-3. — Текст : электронный // ЭБС Юрайт [сайт]. — URL: https://urait.ru/bcode/463497

4. Радиотехника=Radio Engineering : учебное пособие / Г.А. Краснощекова, М.Г. Бондарев, О.В. Ляхова и др. ; под общ. ред. Г.А. Краснощековой. – 4-е изд., стер. – Москва : Флинта, 2019. – 237 с. : табл., ил. – Режим доступа: по подписке. – URL: http://biblioclub.ru/index.php?page=book&id=567107 (дата обращения: 22.09.2020). – ISBN 978-5-9765-2131-5. – Текст : электронный.

Дополнительные источники:

1.Куряева, Р. И. Английский язык. Лексико-грамматическое пособие в 2 ч. Часть 1 : учебное пособие для среднего профессионального образования / Р. И. Куряева. — 8-е изд., испр. и доп. — Москва : Издательство Юрайт, 2020. — 264 с. — (Профессиональное образование). — ISBN 978-5-534-09890-7. — Текст : электронный // ЭБС Юрайт [сайт]. — URL: https://urait.ru/bcode/452245

2.Куряева, Р. И. Английский язык. Лексико-грамматическое пособие в 2 ч. Часть 2 : учебное пособие для среднего профессионального образования / Р. И. Куряева. — 8-е изд., испр. и доп. — Москва : Издательство Юрайт, 2020. — 254 с. — (Профессиональное образование). — ISBN 978-5-534-09927-0. — Текст : электронный // ЭБС Юрайт [сайт]. — URL: https://urait.ru/bcode/452246

3.Нужнова, Е. Е. Английский язык. Professional Reading: Law, Economics, Management : учебное пособие для среднего профессионального образования / Е. Е. Нужнова. — 2-е изд., испр. и доп. — Москва : Издательство Юрайт, 2020. — 149 с. — (Профессиональное образование). — ISBN 978-5-534-12993-9. — Текст : электронный // ЭБС Юрайт [сайт]. — URL: https://urait.ru/bcode/448712

Электронные ресурсы

1. https://archive.org/details/radioelectronicsmagazine
2. https://archive.org/details/popularmechanics

4 КОНТРОЛЬ И ОЦЕНКА РЕЗУЛЬТАТОВ ОСВОЕНИЯ УЧЕБНОЙ ДИСЦИПЛИНЫ

Результаты обучения	**Критерии оценки**	**Методы оценки**
Знания: Лексика по профилю подготовки. Приемы аннотирования, реферирования и перевода специализированной литературы по профилю подготовки. Приемы структурирования информации. Способы самостоятельной оценки и совершенствования уровня знаний по иностранному языку. Особенности произношения на иностранном языке. Возможные траектории профессионального развития и самообразования. Основы проектной деятельности. Основы эффективного сотрудничества в коллективе. Правила устной и письменной коммуникации при переводе с иностранного языка. Основные правила поведения и речевого этикета в сферах повседневного, официально-делового и профессионального общения. Правила экологической безопасности и ресурсосбережения при ведении профессиональной деятельности. Основы здорового образа жизни. Современные средства и устройства информатизации и их использование.	- не имеет базовых знаний (1); - допускает существенные ошибки при раскрытии содержания и особенностей употребления изученного материала (2); - демонстрирует частичное знание содержания и особенностей употребления изученного материала (3); - демонстрирует знание содержания и особенностей употребления изученного материала, но дает не полное его обоснование (4); - демонстрирует полное правильное знание содержания и особенностей употребления изученного материала, аргументировано обосновывает тот или иной выбор при выполнении практического задания (5).	**Входной контроль:** тестирование **Текущий контроль:** устный опрос, беседа, сообщение, реферат, доклад, презентация, тестирование, контрольные работы **Промежуточный контроль:** контрольные работы

Правила работы на компьютере и оргтехнике. Правила ведения переписки по электронной почте. Правила чтения текстов профессиональной направленности на иностранном языке. Правила построения простых и сложных предложений на профессиональные темы. Основные общеупотребительные глаголы (бытовая и профессиональная лексика). Лексика, относящаяся к описанию предметов, средств и процессов профессиональной деятельности. Лексический минимум и нормы речевого поведения и делового этикета для построения устной и письменной речи на иностранном языке. Правила ведения деловой переписки. Правила оформления документов**.**		
Умения: - понимать общий смысл четко произнесенных высказываний на известные темы (профессиональные и бытовые); - понимать тексты на базовые профессиональные темы; - участвовать в диалогах на знакомые общие и профессиональные темы; - строить простые высказывания о себе и о своей профессиональной деятельности; - кратко обосновывать и объяснить свои действия (текущие и планируемые); - писать простые связные	- не умеет и не готов к взаимодействию на иностранном языке (1); - имея базовые знания, не умеет самостоятельно отбирать, систематизировать и применять усвоенную информацию для реализации чтения, письма, говорения и восприятия речи на слух на иностранном языке (2); - демонстрирует частичное владение чтением, письмом, говорением и восприятием речи на слух	**Входной контроль:** тестирование. **Текущий контроль:** устный опрос, беседа с экспертом, контрольные работы, тестирование, защита индивидуальных и групповых заданий проектного характера

сообщения на знакомые или интересующие профессиональные темы; -читать, писать, воспринимать речь на слух и воспроизводить иноязычный текст по ключевым словам или по плану; - работать с бизнес статьями на иностранном языке с целью извлечения и переработки информации, ведения переговоров в деловой среде; - переводить со словарём основные термины по профилю подготовки; - переводить, обобщать и анализировать специализированную литературу по профилю подготовки.	и допускает существенные ошибки при их реализации (3); - демонстрирует в целом успешное владение чтением, письмом, говорением и восприятием речи на слух, но допускает некоторые пробелы и неточности в конкретных заданных условиях(4); - демонстрирует правильное владение чтением, письмом, говорением и восприятием речи на слух на иностранном языке для обеспечения полноценной профессиональной деятельности (5).	**Итоговый контроль:** дифференцированный зачет

МИНОБРНАУКИ РОССИИ

ВЛАДИВОСТОКСКИЙ ГОСУДАРСТВЕННЫЙ УНИВЕРСИТЕТ ЭКОНОМИКИ И СЕРВИСА

КОМПЛЕКТ КОНТРОЛЬНО-ОЦЕНОЧНЫХ СРЕДСТВ

ОГСЭ.03 Иностранный язык в профессиональной деятельности

13.02.11 Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям)

Форма обучения очная

Владивосток 2021

Комплект контрольно-оценочных средств разработан на основе Федерального государственного образовательного стандарта по специальности среднего профессионального образования программы подготовки специалистов среднего звена 13.02.11.Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям), 07 декабря 2017 года № 1196.

Разработана:

Израелян Т.И. – преподаватель Колледжа сервиса и дизайна
Марфина И.В. – преподаватель Колледжа сервиса и дизайна

Рассмотрено и одобрено на заседании цикловой методической комиссии

Протокол № _9__ от «__04__» _____05_____20__21__ г.

Председатель ЦМК  *Трушкина И.А.*

1 Общие сведения

Контрольно-оценочные средства (далее – КОС) предназначен для контроля и оценки образовательных достижений обучающихся, освоивших программу учебной дисциплины ОГСЭ.03 Иностранный язык.

КОС разработаны на основании:

– основной образовательной программы СПО по специальности 13.02.11.Техническая эксплуатация и обслуживание электрического и электромеханического оборудования (по отраслям), 07.12. 2017 № 1196;

– рабочей программы учебной дисциплины ОГСЭ.03 Иностранный язык.

Формой промежуточной аттестации является дифференцированный зачет.

Код ОК	Код результата обучения	Наименование
ОК 1 ОК 2 ОК 3 ОК4 ОК5 ОК 6 ОК7 ОК8 ОК9	У1	общаться (устно и письменно) на иностранном языке на профессиональные и повседневные темы
	У2	переводить (со словарем) иностранные тексты профессиональной направленности
	У3	самостоятельно совершенствовать устную и письменную речь, пополнять словарный запас
	З1	лексический (1200 - 1400 лексических единиц) и грамматический минимум, необходимый для чтения и перевода (со словарем) иностранных текстов профессиональной направленности

2 Распределение типов контрольных заданий по элементам знаний и умений, контролируемых в процессе изучения

Код результата обучения	Содержание учебного материала (темы)	Тип оценочного средства	
		Текущий контроль	Промежуточная аттестация
З1	Тема 1.1. Описание людей: друзей, родных и близких и т.д.(внешность, характер, личностные качества), Тема **1.2.** Межличностные отношения дома, в учебном заведении, на работе. Повседневная жизнь, условия жизни, учебный день, выходной день, Тема 2.1 The History of Electricity, Тема 2.2 Uses' of Electricity, Тема 2.3 Famous Inventor, Тема 2.4 Magnetism, Тема 2.5 Two Types of Electricity, Тема 2.6 Electricity in Cells, Тема 2.7 Magnetism Induced in Electric Flow, Тема 2.8 The Induction	практические занятия, беседа\дискуссия; реферат, презентация; просмотровое и поисковое чтение газетных, журнальных статей (со словарём, без словаря); монологическа	Дифференцированный зачет

	Coil, Тема 2.9 The Simple Transformer, Тема 3.1 Kinds of Currents, Тема 3.2 Conductors and Insulators, Тема 3.3 Familiar Types of Circuits, Тема 3.4 Switches for low voltage circuits, Тема 3.4 Fuses, Тема 3.5 Storage Batteries, Тема 3.6 Charging a Storage Battery, Тема 3.7 Electrical Power and Horsepower, Тема 3.8 The Generator, Тема 3.9 Electrical Motor, Тема 4. The Care of Motors	я речь, тестирование; диалогическая речь; полилог.	
У1	Тема 1.1.Описание людей: друзей, родных и близких и т.д.(внешность, характер, личностные качества), Тема 1.2. Межличностные отношения дома, в учебном заведении, на работе. Повседневная жизнь, условия жизни, учебный день, выходной день		дифференцированный зачет
У2	Тема 2.2 Uses' of Electricity, Тема 2.3 Famous Inventor, Тема 2.5 Two Types of Electricity, Тема 2.6 Electricity in Cells, Тема 2.8 The Induction Coil, Тема 2.9 The Simple Transformer, Тема 3.2 Conductors and Insulators, Тема 3.4 Switches for low voltage circuits, Тема 3.4 Fuses, Тема 3.5 Storage Batteries, Тема 3.8 The Generator, Тема 3.9 Electrical Motor, Тема 4. The Care of Motors		дифференцированный зачет
У3	Тема 2.1 The History of Electricity, Тема 2.4 Magnetism, Тема 2.7 Magnetism Induced in Electric Flow, Тема 3.1 Kinds of Currents, Тема 3.3 Familiar Types of Circuits, Тема 3.6 Charging a Storage Battery, Тема 3.7 Electrical Power and Horsepower		дифференцированный зачет

Структура банка контрольных заданий для текущего контроля и промежуточной аттестации

Тип контрольного задания	Количество контрольных заданий (вариантов)	Общее время выполнения обучающимся контрольный заданий
Текущий контроль		
Тестовое задание №1, Choose the right variant.	20 заданий	20 минут
Тестовое задание №2, Choose the right variant.	20 заданий	20 минут
Тестовое задание №3, Choose the right variant.	20 заданий	20 минут
Тестовое задание №4, Choose the right variant.	20 заданий	20 минут
Тестовое задание №5, Choose the right variant.	20 заданий	20 минут
Тестовое задание №6, Choose the right variant.	20 заданий	20 минут
Тестовое задание №7, Choose the right variant.	20 заданий	20 минут
Тестовое задание №8, Choose the right variant.	20 заданий	20 минут
Тестовое задание №9, Choose the right variant.	20 заданий	20 минут
Тестовое задание №10, Choose the right variant.	20 заданий	20 минут
Устный ответ		
Theme 1		20 минут
Theme 2		20 минут
Theme 3		20 минут
Theme 4		20 минут
Theme 5		20 минут
Theme 6		20 минут
Theme 7		20 минут
Theme 8		20 минут
Task 1 Render the text	1 задание	30 минут
Task 2 Render the text	1 задание	30 минут
Task 3 Render the text	1 задание	30 минут
Task 4 Render the text	1 задание	30 минут
Task 5 Render the text	1 задание	30 минут
Task 6 Render the text	1 задание	30 минут

Тип контрольного задания	Количество контрольных заданий (вариантов)	Общее время выполнения обучающимся контрольный заданий
Task 7 Render the text	1 задание	30 минут
Task 8 Render the text	1 задание	30 минут
Task 9 Render the text	1 задание	30 минут
Task 10 Render the text	1 задание	30 минут
Task 11 Render the text	1 задание	30 минут
Task 12 Render the text	1 задание	30 минут
Task 13 Render the text	1 задание	30 минут
Task 14 Render the text	1 задание	30 минут
Task 15Render the text	1 задание	30 минут
Task 16 Render the text	1 задание	30 минут
Комплексные тесты для промежуточной аттестации		
ВАРИАНТ 1	5 заданий	40 минут
ВАРИАНТ 2	5 заданий	40 минут

4 Структура контрольных заданий

4.1 Тестовое задание

Test 1

Choose the right variant.

1. Have you ever visited other countries? - Yes, I... to Italy and France.
a) was c) had been
b) have been d) would be
2. I feel really tired. We ... to the party last night and have just returned home.
a) went c) had seen
b) has gone d) was going
3. At the beginning of the film I realized that I ... it before.
a) see c) had seen
b) saw d) have seen
4. When the bus stopped in the small square, Helen ... her magazine and didn't realized at first that she had arrived at her destination.
a) read c) was reading
b) reads d) had read

5. My sister's son ... in tomorrow's race, because he is too young. They do not allow riders under sixteen.
a) won't ride c) wouldn't ride
b) shan't ride d) doesn't ride
6. A beautiful bridge ... in our city. It will be finished next year.
a) builds c) is being built
b) is built d) has been built
7. It has been raining for two hours. I hope it ... raining soon.
a) stops c) would stop
b) shall stop d) stop
8. Television has many advantages. It keeps us informed about the latest news, and also ... entertainment at home.
a) provide c) is provided
b) provides d) provided
9. On the other hand television ... for the violent behavior of some young people, and for encouraging children to sit indoors, instead of doing sports.
a) blames c) is blamed
b) blamed d) would blame
10. Some millionaires have lots of money and ... what to do with it.
a) don't know c) won't know
b) didn't d) knows
11. How ... at college? You didn't say much about it in your last letter.
a) do you get on c) will you get on
b) are you get on d) are you getting on
12. When you ... in this city again? - In a month.
a) arrive c) have you arrived
b) arrived d) will you arrive
13. Every time that I miss the bus, it means that I ... walk to work.
a) has to c) had to
b) have to d) could
14. Every time when I missed the bus, I ... to return home late.
a) must c) can
b) had d) may
15. That was great! It was ... meal you have ever cooked.
a) good c) best
b) better d) the best
16. This exhibition is ... interesting than the previous one.
a) little c) least
b) less d) the least
17. We saw ... good film last night. The film was about the love of a girl to her cat and dog.
a) a c) -
b)the d) an
18. Everybody agrees that ... happiness is very important in the life of people.
a) - c) a
b) the d) many
19. In the past people lived in ... harmony with the environment.
a) a c) the
b) an d) -
20. When they arrived ... the station, they rushed to the platform not to miss the train.
a)to c)in
b) at d) for

Test 2

Choose the right variant.

1. When you ... older, you'll change your mind about this.
a) will grow c) have grown
b) grow d) grew
2. By the time the police get there, the burglars ... .
a) vanish c) will have vanished
b) will vanish d) vanished
3. As soon as the taxi arrives, I ... you know.
a) let c) had let
b) have let d) will let
4. My friend has been writing to me for years already, but he never ... a photo.
a) sends c) will send
b) has sent d) sent
5. Why are you busy packing? - My train ... in two hours, so we'll leave the house in an hour.
a) is leaving c) leaves
b) will be leaving d) left
6. When was this building finished? - They say it ... by the end of last year.
a) had been finished c) will be finished
b) was finished d) finishes
7. I thought that I ... my key and was very glad when I found it.
a) lose c) had lost
b) lost d) was losing
8. What's the matter? You look upset. Last week I lost my scarf and now I just ... my gloves.
a) lost c) had lost
b) have lost d) lose
9.1 ... for this bank for five years already but I have decided to change my job.
a) am working c) have been working
b) has worked d) worked
10. Martin said that he ... the tickets the next day.
a) bought c) will buy
b) had bought d) would buy
11. The house opposite our college .,., that's why we are using the back entrance at present.
a) pulls down c) is being pulled down
b) is pulled down d) pulled down
12. You ... an umbrella when you left the house, didn't you?
a) have c) had had
b) was having d) had
13. By the time we got to the cinema the film ... .
a) will begin c) had begun
b) would begin d) began
14. Is there anything I ... do to help you?
a) can c) am to
b) may d) as to
15. The last film I saw was ... frightening than this one.
a) little c) least

b) less d) the least
16. Someone is calling you. Will you answer ... phone?
a) a c) -
b) the d) these
17. To tell the truth I don't like ... pair of trousers that I bought last month.
a) those c) that
b) this d) a
18. Whose house is it? - It's ... .
a) my c) her
b) mine d) our
19. Today is ... cold than yesterday. So, I'm wearing my shorts.
a) little c) least
b) less d) the least
20. "Come home ... Christmas Day, we'll be waiting for you", my mother always says to me.
a)in c) -
b) on d) at

Test 3

Choose the right variant.

1. Excuse me, do you speak English? I ... for a hotel.
a) look c) was looking
b) am looking d) have been looking
2. Last summer we wanted a relaxing holiday, so we ... to stay on a small island.
a) choose c) had chosen
b) have chosen d) chose
3. Mathematics ... hard. I don't understand it.
a) are c) was
b) is d) were
4. While we ... for the train, it started to rain.
a) waited c) was waiting
b) are waiting d) were waiting
5. The police officer said that every house in that street ... already by the police.
a) search c) had been searched
b) were searched d) searched
6. There is going to be a big art exhibition. It... a lot of visitors.
a) attracts c) has attracted
b) will attract d) attracted
7. The result of his investigation ... in the newspaper soon.
a) publish c) will be published
b) be published d) is published
8. When they arrived home, their children ... outside the door waiting for them.
a) sit c) was sitting
b) are sitting d) were sitting
9. We ... a new computer not long ago. Now the job will be done much more quickly.
a) had bought c) bought
b) was bought d) have bought
10. He was sorry that he ... to me for so long.
a) didn't write c) hadn't been writing
b) haven't been writing d) hasn't been writing

11. The ring you found ... be returned to an old lady who had lost it.
a) can c) have to
b) must d) are to
12. Everybody in our team played ... except the captain.
a) bad c) worst
b) badly d) the worst
13. You know much, but you know ... than your teacher.
a) little c) least
b) less d) much
14. Small shops are not as ... as supermarkets.
a) more convenient c) most convenient
b) convenient d) the most convenient
15. Sarah is a very good pianist. She plays ... piano very well.
a) a c) the
b)an d)-
16. We had five phone calls, but there were ... for you.
a) no c) either
b) none d) neither
17. I didn't have much time, but I ... visit a lot of places of interest in London.
a) can c) must
b) was able to d) had to
18. That's an easy question! ... knows the answer!
a) All c) Each
b) Everybody d) Every
19. The comic told silly jokes, but nobody laughed ... him.
a) on c) at
b) under d)about
20. We feel sorry ... Sam because he hasn't got any friends.
a) for c) with
b)about d) by

Test 4

Choose the right variant.

1. If I ... some fish, will you cook it for me?
a) will catch c) caught
b) catch d) am catching
2. She said that she ... her present flat. She tried to find another one.
a) doesn't like c) didn't like
b) won't like d) likes
3.I saw you yesterday from the bus. Where ... you ... at that time?
a) was hurrying c) had hurried
b) were hurrying d) did hurry
4.I found that everything I said on the phone ... to the police.
a) report c) was reported
b) is reported d) had been reported
5. When I speak Italian, all the others in the class ... at me as I don't know the language well.
a) laughed c) will laugh

b) was laughing d) laugh
6. He ... in the Army for eighteen months. This is his last month.
a) serves c) has been serving
b) is serving d) have served
7. Don't make noise: the children ... to sleep.
a) try c) will try
b) is trying d) are trying
8. A new museum ... in the city. What a beautiful building it will be!
a) was being built c) is built
b) is being built d) builds
9. Two terrorists ... in New York some days ago.
a) are arrested c) were arrested
b) have been arrested d) will be arrested
10.1 ... understand this letter. Will you translate it for me?
a) mustn't c) may not
b) can't d) shouldn't
11. Diana's parents don't let her go to late-night disco. She ... be at home at 9 o'clock in the evening.
a) must c) may
b) can d) have to
12. Henry ... apologize for his bad behaviour yesterday.
a) have to c) had to
b) may d) is to
13. The children studied hard, and as a result they passed the exams ... of all.
a) good c) best
b) better d) the best
14. This is ... film I've ever seen.
a) more interesting c) most interesting
b) the most interesting d) not interesting
15. ... old, ... sick, ... unemployed need our special care.
a) - c) the
b) an d)everybody
16. Someone who saw ... robbery called the-police.
a) - c)the
b) a d)those
17. According to this song ... we need is love.
a) all c) each
b) every d) some
18. We wished the bride and groom happiness in ... new life together.
a) there c) theirs
b) their d) these
19. Excuse me, but does this umbrella belong ... you?
a) to c) at
b) for d) with
20. I listened to the radio every day to know the weather forecast but I can never rely ... it.
a) at c) in
b) to d) on

Test 5

Choose the right variant.

1. I knew that I ... her somewhere before.
a) saw c) would see
b) had seen d) has seen
2. When I finally found the house, I knocked at the door but ... the answer.
a) don't hear c) didn't hear
b) hasn't heard d) heard
3. I went out into the garden to fetch my bike, but found that someone ... it.
a) stole it c) has stolen
b) would steal d) had stolen
4. When I... for the keys, I remembered that I had left them at home.
a) looked c) had been looking
b) was looking d) look
5. I have been working for the bank for a year already, but I ... to change my job.
a) decided c) has decided
b) have decided d) decide
6. They spoke so quickly that I ... what they were speaking about.
a) not understand c) didn't understand
b) don't understand d) hadn't understood
7. Yesterday our flight ... because of the fog.
a) cancelled c) had been cancelled
b) was cancelled d) has been cancelled
8. I couldn't open the office door because someone ... it.
a) lock c) had locked
b)locked d)would lock
9. As soon as you ... me, I will contact you.
a) calls c) called
b) will call d) call
10.1 ... him since he started working here.
a) have never trusted c) trusted
b) had never trusted d) trust
11. Mary will be ready soon. She ... coffee at the moment.
a) has c) was having
b) have d) is having
12. If we ... late for the class, our teacher will be angry with us.
a) is c) will be
b) were d) are
13. We ... in the sunshine for about half an hour when I suddenly felt sick.
a) have been sitting c) sat
b) were sitting d) had been sitting
14. We were disappointed as the film was ... than we expected.
a) entertaining c) most entertaining
b) less entertaining d) entertaining
15. We usually ask our teacher to explain ... difficult problems to us.
a) the c) a
b) - d) this
16. Playing ... guitar is an interesting hobby.
a) - c) the
b) a d) mine
17. Our city is famous for ... beautiful ancient buildings.
a) its c) it's

b) it d) his
18. Her hair is long and fair. Everybody admires ... .
a) them c) they
b) it d) its
19. You are very good ... dealing with people.
a) in c) on
b) at d) about
20. Last summer our neighbours decided to drive to Scotland ... a short holiday.
a) at c) on
b) to d) for

Test 6

Choose the right variant.

1. When the light ... I was sitting in the armchair reading a book.
a) goes out c) go out
b) had gone out d) went out
2. I thought I ... this film before, but I hadn't.
a) saw c) had seen
b) seen d) have seen
3. Why haven't you brought me the letters for signature? ... them yet?
a) Don't you type c) Haven't you typed
b) Didn't you type d) Will you type
4. She wasn't sure whether she ... the door of her flat.
a) locked c) had locked
b) has locked d) didn't lock
5. I... my homework all morning and haven't finished it yet.
a) am doing c) have been doing
b) do d) did
6. The inspector suspected that the thief ... a special key for opening this door.
a) uses c) had used
b) has used d) will use
7. I was very tired. When I ... to bed, I fell asleep immediately.
a) got c) had got
b) has got d) will get
8. The Vikings ... to North America a thousand years ago.
a) sail c) had sailed
b) sailed d) have sailed
9. Thank you for your offer, but I ... not to accept it.
a) decide c) have decided
b) has decided d) decided
10. You ... through your old photograph album for half an hour already.
a) look c) have looked
b) are looking d) have been looking
11. Nobody knows where his picture is. Perhaps, it ... .
a) was stolen c) has been stolen
b) will be stolen d) stolen
12. I agree. You ... apologize for not inviting him to your birthday party.
a) can't c) shouldn't
b) mustn't d) may not

13. Actually, today I feel ... than I did yesterday.
a) bad c) worst
b) worse d) the worst
14. ... people who are unemployed often feel depressed.
a) The c) A
b) - d) That
15. Who was the first astronaut who landed on ... Moon?
a) the c) a
b) - d) those
16. What happened at the end of the film? - I'm sorry to say, but I haven't seen ... film.
a) a c) -
b) the d) those
17. This is ... interesting exhibition I've ever visited.
a) more c) less
b) most d) the most
18. Would you mind waiting ... minutes?
a) few c) little
b) a few d) a little
19. I'm ... interested in languages than in mathematics,
a) much c) little
b) many d) less
20. The students often translate English texts ... Russian.
a) to c) into
b) in d) on

Test 7

Choose the right variant.

1. My mother ... strawberries for years but she has never had such a good crop before.
a) grow c) has been growing
b) grew d) had grown
2. Helen got off the bus and walked into the bank when she realized that she ... her handbag on the bus.
a) left c) has left
b) had left d) leaves
3. You are a great cook! This cake ... wonderful as usual.
a) taste c) will taste
b) tasted d) tastes
4. I cut my finger when I ... the potatoes.
a) am peeling c) was peeling
b) have peeled d) will peel
5. The students ... not to be late for their classes.
a) ask c) are asked
b) asked d) are asking
6. Yesterday, while Jane ... she broke two cups.
a) wash up c) was washing up
b) washes up d) has washed up
7. Be attentive and more serious. You always ... something!
a) lose c) have lost
b) are losing d) have been loosing

8. What ... you ... when I phoned you last night?
a) did do c) had done
b) were doing d) had been doing
9. Our flat ... at the moment, so it doesn't look its best.
a) paints c) is being painted
b) is painted d) has been painted
10. My brother will be absent. He ... for his exam at this time tomorrow.
a) will prepare c) will have prepared
b) will be preparing d) will have been preparing
11. ... you give me some advice about the language courses?
a) Have c) Should
b) May d) Could
12. Why didn't you give me a call yesterday? We ... discuss everything together.
a) can c) may
b) must d) could
13. At college the work is harder than the work we did at school, but it is much ... interesting.
a) more c) many
b) most d) a few
14. A person with a good education usually gets ... better job.
a) - c) the
b) a d) an
15. ... poor people need help from the government.
a)- c)A
b) The d) This
16. The government should help ... poor.
a) - c) a
b) the d)that
17. You can do ... you want, but don't bother me now.
a) anything c) some
b) something d) any
18. The government is going to provide ... houses for homeless people.
a) much c) most
b) more d) least
19.1 think of coming to Moscow ... a few days to visit my sister.
a) of c) for
b)on d)over
20. I think we should ask ... some information about this case.
a) about c) for
b) - d) on

Test 8

Choose the right variant.1
1.The train stopped at all the stations, and long before we got to London every seat ... and people were standing in the corridors.
a) has been taken c) had been taken
b) was taken d) is taken
2. Most of the young people left this village a long time ago and nobody ... yet.
a) returned c) had returned

b) has returned d) was returned
3. The police suspected that Bill himself had broken the window at his house because he wanted to make them think that a burglar ... his valuable stamp collection.
a) stole c) was stealing
b) had stolen d) has stolen
4. The police thought that he ... it because he needed money.
a) did c) was doing
b) had done d) has done
5. If you work a bit harder, I'm sure you ... the exam.
a) pass c) have passed
b) will pass d) would pass
6. Where are you going? I ... speaking with you yet.
a) not finished c) haven't finished
b) didn't finish d) don't finish
7.I didn't see where the bus stop was, so I... the bus yesterday.
a) miss c) has missed
b) missed d) had missed
8. Last week a burglar broke into the house while we ... television.
a) watch c) watched
b) have watched d) were watching
9. When are you going to finish this translation? - I... this translation today.
a) finish c) have finished
b) finished d) had finished
10. I felt really tired. We ... for two hours before we reached the nearest hotel.
a) walked c) have been walking
b) were walking d) had been walking
11. My father is sure that most people ... bicycles to work in twenty years' time.
a) shall ride c) ride
b) will be riding d) are riding
12. The plane ... take off after the fog had lifted.
a) must c) can
b) was able to d) may
13. Finally we ... stop: we were tired and it was dark.
a) can c) must
b) may d) had to
14. In the past most of the population lived in ... country.
a) the c) -
b) a d) this
15. The judge sent our neighbor to ... prison for a month.
a) the c) -
b) a d) an
16. ... English are proud of their country and that the English language is spoken all over the world.
a) the c) an
b) - d) few
17. Why have you done it? Oh, there are ... reasons for it.
a) much c) a little
b) little d) many
18. Sorry, but I can't hear ... of you properly.
a) neither c) nobody
b) either d) none

19. We were looking forward ... a quiet rest near the forest.
a) for c) on
b) to d) at
20. Our city is famous ... its beautiful ancient buildings.
a) of c) by
b) for d) with

Test 9

Choose the right variant.

1. My passport ... last month, and nobody has found it yet .
a) lost c) has been lost
b) was lost d) had been lost
2. There's going to be an interesting art exhibition. It ... a lot of visitors.
a) attracts c) will attract
b) attract d) would attract
3. Have you head the news? He ... all his exams this week.
a) passed c) had passed
b) has passed d) pass
4. By the time we get to the cinema the film ... .
a) will begin c) will have begun
b)begins d)began
5. He says his train ... at 8 a.m. He's packing his things at the moment.
a) leave c) has left
b) leaves d) would leave
6.I was quite ... to see Ben behaving like that.
a)shocked c) being shocked
b)shocking d)shock
7. I ... on the phone when the postman knocked on the door and entered the room.
a) speak c) was speaking
b) am speaking d) have spoken
8. We first came to this town more than twenty years ago. Everything ... in the town since that time.
a)change c) has changed
b)changed d)is changed
9. We didn't know that Bill ... to Brazil the week before, and he was abroad when the burglary took place.
a) flew c) has flown
b) had flown d) would flow
10. I arrived in Prague in September last year. So I ... here for six months.
a) live c) have lived
b) lived d) will live
11. While I was wondering whether to buy the shoes or not, they ... by someone else.
a) buy c) were bought
b) bought d) had been bought
12. He was happy. He ... pass his driving test at the first attempt.
a) should c) had to
b) must d) was able to
13. At present I ... afford to go to the cinema twice a week.
a) can't c) must not

b) couldn't d) might not
14. We didn't think you were ... in ancient history.
a) interested c) not interesting
b) interesting d) less interesting
15. Every morning I listen to ... radio, but I don't like to watch TV so early.
a) the c) -
b) a d) these
16. ... English is the world language and the English language spoken in the USA or Australia differs from the English language spoken in Britain.
a)the c) an
b) - d)a
17. You are always quarreling! Stop it, ... of you!
a)everybody c) both
b) some d) every
18. Mr. Smith was accused of spying and put ... prison.
a) in c) at
b) of d) to
19. Our city succeeded ... collecting a large sum of money for charity.
a) on c) with
b) in d) at
20. I'm sorry ... your difficulties. Can I help?
a)for c) about
b) at d)on

Test 10

Choose the right variant.
1. It's 11 o'clock so I ... to bed now.
a) go c) will go
b) am going d) have gone
2. The tickets to the football match usually ... and checked at the entrance.
a) sell c) are sold
b) was sold d) won't be sold
3. We ... to the party today.
a) have been invited c) have invited
b) are invited d) had been invited
4. The baby ... because it is hungry now.
a) crying c) cries
b) is crying d) cried
5. There ... a lot of people waiting in the station yesterday evening.
a) is c) was
b) are d) were
6. Some people ... on the benches waiting for their trains.
a) was sleeping c) have slept
b) were sleeping d) had slept
7. By the time the train arrived, Susan ... to push her way to the front of the crowd.
a) managed c) had managed
b) has managed d) would manage
8. ... you ... my English book anywhere? I can find it nowhere.
a) Did ... see c) Will ... see

b) Have ... seen d) Had ... seen
9. He ... the text before I decided to help him.
a) translated c) has translated
b) had translated d) will translate
10. It ... in London this morning that the British Oil Corporation had discovered oil under the sea near the Welsh coast.
a) announced c) had been announced
b) would be announced d) was announced
11. If he ... when I come, I won't wake him up.
a) sleep c) will sleep
b) will be sleeping d) is sleeping
12. ... they leave before supper or have they time to stay until my friends come?
a) must c) might
b) may d) should
13. My ... brother studies at college.
a) old c) older
b) elder d) the eldest
14. This is ...film I have ever seen.
a) good c) worse
b) the best d) better
15. ... Hyde Park is a very large park in central London.
a) - c) a
b) the d) an
16. My friends tell me that professors are people who think a lot, but say ... .
a) little c) a few
b) few d) some
17. These books cost ... than my friend wants to pay.
a) more c) most
b) much d) the most
18. He has earned so ... money that he has decided to help the poor.
a) much c) little
b) many d) few
19. They go to work by car and come home ... foot.
a) by c) with
b) on d) in
20. The bus from Glasgow arrives ... the Central bus station.
a) at c) in
b) to d) for

Ключи к заданиям:

Test 1

1) b; 2) a; 3) c; 4) c; 5) a; 6) c; 7) a; 8) b; 9) c; 10) a; 11) d; 12) d; 13) b; 14) b; 15) d; 16) b; 17) a; 18) a; 19) d; 20) b.

Test 2

1) b; 2) c; 3) d; 4) b; 5) c; 6) a; 7) c; 8) b; 9) c; 10) d; 11) c; 12) d; 13) c; 14) a; 15) b; 16) b; 17) c; 18) b; 19) b; 20) b.

Test 3

1) b; 2) d; 3) b; 4) d; 5) c; 6) b; 7) c; 8) d; 9) c; 10) c; 11) b; 12) b; 13) b; 14) b; 15) c; 16) b; 17) b; 18) b; 19) c; 20) a.

Test 4

1) b; 2) c; 3) b; 4) c; 5) d; 6) c; 7) d; 8) b; 9) c; 10) b; 11) a; 12) c; 13) c; 14) b; 15) c; 16) c; 17) a; 18) b; 19) a; 20) d.

Test 5

1) b; 2) c; 3) d; 4) b; 5) b; 6) c; 7) b; 8) c; 9) d; 10) a; 11) d; 12) d; 13) d; 14) b; 15) b; 16) c; 17) a; 18) b; 19) b; 20) d.

Test 6

1) d; 2) c; 3) c; 4) c; 5) c; 6) c; 7) a; 8) Ь; 9) c; 10) d; 11) c; 12) c; 13) Ь; 14) Ь; 15) a; 16) Ь; 17) d; 18) b; 19) d; 20) c.

Test 7

1) c; 2) b; 3) d; 4) c; 5) c; 6) c; 7) b; 8) b; 9) c; 10) b; 11) d; 12) d; 13) a; 14) b; 15) a; 16) b; 17) a; 18) b; 19) c; 20) c.

Test 8

1) c; 2) b; 3) b; 4) b; 5) b; 6) c; 7) b; 8) d; 9) c; 10) d; 11) b; 12) b; 13) d; 14) a; 15) c; 16) a; 17) d; 18) b; 19) b; 20) b.

Test 9

1) b; 2) c; 3) b; 4) c; 5) b; 6) a; 7) c; 8) c; 9) b; 10) c; 11) c; 12) d; 13) a; 14) a; 15) a; 16) b; 17) c; 18) d; 19) b; 20) c

Test 10 1) b; 2) c; 3) a; 4)b; 5) d; 6) b; 7) c; 8) b; 9) b; 10) d; 11) d; 12) a; 13) b; 14) b; 15) a; 16) a; 17) a; 18) a; 19) b; 20) a;

Критерии оценки

- оценка «отлично» выставляется обучающемуся, если студент выполнил задание от 91% до 100%
- оценка «хорошо», если студент выполнил задание от 70% до 90%
-оценка «удовлетворительно», если студент выполнил задание от 50% до 69%
-оценка «неудовлетворительно», если студент выполнил задание менее 50%

4.2 Вопросы для собеседования (устного опроса):

1. My Family

1. Is your family large?
2. What members does it consist of?
3. What is your mother’s name? (father’s)
4. How old is she? (he)
5. What is your name?
6. What are you?
7. Where do you live?
8. Is your college far from your house?
9. What do you do in your spare time?
10. What do the members of your family like to do in the evening?

2.Different kinds of hobbies.

1. What is hobby?
2. Why do people choose a hobby?
3. What categories are hobbies divided into?
4. What can you say about art?
5. What is the most widespread kind of hobby?
6. Whom attract handicrafts?

7. Who likes games and sports?
8. What do people like collecting?
9. What does hobby offer?
10. What is your hobby?

3.Education

1. What is education?
2. Are there two types of education?
3. When do people enter a system of formal education?
4. Do learners have to pass the exams?
5. What do the learners earn at the end of their learning?
6. What education do the school systems of all modern nations provide?
7. When does informal education involve people in learning?
8. What does general education aim?
9. What does vocational education aim?
10. What are adult education programs provided for?

4.Science and technology

1. What is science?
2. What is technology?
3. Are they interconnected?
4. When did industrial technology begin?
5. When was the steam engine invented? Who invented it?
6. When was radio invented? Who invented it?
7. When was television invented? Who invented it?
8. When was the first car invented?
9. When was the first digital computer invented? Who invented it?
10. What famous scientists do you know?

5.Mass media

1. What kind of mass media do you know?
2. Why is TV one of the important mass media?
3. What is the reason for the widespread use of radio?
4. What do newspapers provide?
5. What kind of mass media do you prefer?
6. How much time a day do you watch TV?
7. What are your favourite TV programmes? Why?
8. What is your favourite radio station? Why?
9. Do you buy newspapers? What kind of?
10. Do you use Internet? What for?

6.Different kind of arts

1. What does the word “theatre” come from?
2. What does theatre include?
3. What forms of drama do you know?
4. What kind of theatres do you know?
5. Where is the theatrical centre in the UK?
6. Have you ever been to Bolshoi Theatre?
7. What kind of music do you like?
8. What kind of classical music do you know?
9. Why does music play a major role in other arts?
10 .What does music provide people with?

7.Problems of our planet

1. What does the term “environmental pollution” mean?
2. How do people pollute the surroundings?

3. What does environmental pollution cause?
4. What can badly polluted air cause?
5. What does polluted water cause?
6. Why is the pollution problem complicated?
7. Where does nuclear radiation come from?
8. Do you know the influence on people of the small amounts of radiation?
9. Where do you live? Are your surroundings clear?
10. How can we reduce the pollution of the surroundings?

8.Famous people

1. Which member of the Royal Family opened a building with the words: "I declare this thing open, whatever it is"?
2. What relation is Viscount Althorp to Princess Diana?
3. Which of the present Royals said: "There are lots of new stars to fill the centre stage. I'm in the back row of the chorus"?
4. Which regiment did Prince Edward join up with when he was 18?
5. In a TV interview, she was asked what she would like to be in another life, she answered: "A long distance lorry driver". Who was it who said this?
6. Which members of the Royal Family said: "If men had to have babies, they would only have one"?
7. Who gave this unforgettable piece of gardening advice: "To get the best result, you must talk to your vegetables"?
8. What was original about the birth of Prince William?
9. Whose favourite dogs are corgis?
10. Who is the author of Budgie's children books?

Task 1 Render the text

Electronic Circuit Elements

Resistors. A resistor is a circuit element designed to insert resistance in the circuit. A resistor may be of low value or of high value. Resistors in electronic circuits are made in a variety of sizes and shapes.

They are generally classed as fixed, adjustable or variable, depending upon their construction and use.

The resistance value of small fixed resistors is sometimes indicated by a code colour. Resistors required to carry a comparatively high current and dissipate high power are usually of the wire-wound ceramic type.

Adjustable and variable resistors. An adjustable resistor is usually of the wire-wound type with a metal collar which may be moved along the resistance wire to vary the value of the resistance placed in the circuit. In order to change the resistance, the contact band must be loosened and moved to the desired position and then tightened so that it will not slip. In this way the resistor becomes, for all practical purposes, a fixed resistor during operation.

A variable resistor is arranged so that it may be changed in value at any time by the operator of the electronic circuit. This change is usually accompanied by rotating a small adjustment knob or by turning a screw adjustment. Variable resistors are commonly known as **rheostats** or **potentiometers.**

It must be pointed out that the use of a resistor of any type must be very carefully considered. The capacity of a fixed resistor, rheostat or potentiometer must be such that it can handle the current through the circuit without damage computing the current by means of Ohm's law.

Inductors. The purpose of an inductor, or inductance coil, is to insert inductance into a circuit. The effect of an inductance is to oppose any change in the existing current flow in a circuit. The opposition to current flow in an a. c. circuit by an inductor is called inductive reactance and is measured in ohms.

Inductors are made in many shapes and designs. An inductor used in extremely high-frequency circuits may consist of only one turn or even less than one turn of wire. On the other hand, an inductor used as a choke coil in a low-frequency circuit or in a filter circuit may contain many turns of wire and also be wound on an iron core to increase the inductance.

Inductors are often used in radio in connection with capacitors to provide tuned circuits. These tuned circuits are most valuable in radio and television for filtering out unwanted frequencies and passing the desired frequencies.

Inductance coils are rated as to value in henrys. One henry is a comparatively large inductance. Therefore, many of the inductors used in electronic circuits are rated in millihenrys. One millihenry (mh) is one thousandth of a henry. One henry is the inductance of a coil which will produce a back voltage of 1 volt when the current change is at the rate of 1 amp per second.

Task 2 Render the text

A capacitor may be defined as a device consisting of two or more conductor plates separated from one another by a dielectric and used for receiving and storing an electric charge. The effect of a capacitor in an electric circuit is to oppose any change in the existing voltage.

Capacitors are commonly used in d. c. circuits to reduce the effects of transient voltages and currents. Electrical transients are high voltages developed from time to time when the circuit is broken or reconnected, as when a switch is turned on or off. These transient voltages are usually caused by the inductance of a circuit. In an a. c. circuit the capacitor is often used to block the direct current but permit the flow of the alternating current. In effect, the alternating current appears to flow through the capacitor but is actually being stored first on one plate of the capacitor and then on the other.

Like many other electronic units, capacitors are manufactured in a wide variety of sizes and styles. Some very low-capacity capacitors are merely tiny wafers of metal separated by an insulator; large capacitors may weigh several pounds. Fixed capacitors are of two general types. One is the dry capacitor which consists of metal plates separated by a dry dielectric such as mica or waxed paper, and the other is the electrolytic capacitor, whose dielectric is a chemical paste or one electrolyte. The electrolytic capacitor is effective in only one direction. This means that it must be connected in such a manner that the positive and negative polarities are correct. If it is connected in reverse, the current will flow through the capacitor and destroy it. Fixed capacitors of both the dry and electrolytic type are manufactured in a wide variety of shapes and sizes. The electrolytic capacitors are marked to indicate the correct method of connection into a circuit.

The unit of capacitance is a farad. A capacitor which will store 1 coulomb of electricity under an e. m. f. of 1 volt has a capacitance of 1 farad. The farad is an extremely high value of capacitance; therefore capacitors used in standard electronic circuits are rated in^{9} microfarads (1 mf = one millionth of a farad) or micromicrofarads (1 mf = one millionth of a microfarad).

Task 3 Render the text

Lithium-ion batteries are incredibly popular these days. You can find them in laptops, PDAs, cell phones and iPODs. They're so common because, they're some of the most energetic rechargeable batteries available.

Lithium-ion batteries have also been in the news lately. That's because these batteries have the ability to burst into flames occasionally. It's not very common – just two or three battery packs per million have a problem -- but when it happens, it's extreme. In some situations, the failure rate can rise, and when that happens you end up with a worldwide battery recall that can cost manufacturers millions of dollars.

So the question is, what makes these batteries so energetic and so popular? How do they burst into flame? And is there anything you can do to prevent the problem or help your batteries last longer? In this article, we'll answer these questions and more.

Lithium-ion batteries are popular because they have a number of important advantages over competing technologies:

1) They're generally much lighter than other types of rechargeable batteries of the same size. The electrodes of a lithium-ion battery are made of lightweight **lithium** and **carbon**. Lithium is also a highly reactive element, meaning that a lot of energy can be stored in its atomic bonds. This translates into a very high **energy density** for lithium-ion batteries.
2) Here is a way to get a perspective on the energy density. A typical lithium-ion battery can store 150 watt-hours of electricity in 1 kilogram of battery. A **NiMH (nickel-metal hydride) battery** pack can store perhaps 100 watt-hours per kilogram, although 60 to 70 watt-hours might be more typical. A **lead-acid battery** can store only 25 watt-hours per kilogram. Using lead-acid technology, it takes 6 kilograms to store the same amount of energy that a 1 kilogram lithium-ion battery can handle. That's a huge difference.
1) They hold their charge. A lithium-ion battery pack loses only about 5 percent of its charge per month, compared to a 20 percent loss per month for NiMH batteries.
2) They have no **memory effect**, which means that you do not have to completely discharge them before recharging, as with some other battery chemistries.
3) Lithium-ion batteries can handle hundreds of charge/discharge cycles.

That is not to say that lithium-ion batteries are flawless. They have a few disadvantages as well:

1) They start degrading as soon as they leave the factory. They will only last two or three years from the date of manufacture whether you use them or not.
2) They are extremely sensitive to high temperatures. Heat causes lithium-ion battery packs to degrade much faster than they normally would.
3) If you completely discharge a lithium-ion battery, it is ruined.
4) A lithium-ion battery pack must have an on-board computer to manage the battery. This makes them even more expensive than they already are.
5) There is a small chance that, if a lithium-ion battery pack fails, it will burst into flame.

Many of these characteristics can be understood by looking at the chemistry inside a lithium-ion cell.

Inside a Lithium-ion Battery Pack and Cell

Lithium-ion battery packs come in all shapes and sizes, but they all look about the same on the inside. If you were to take apart a laptop battery pack (something that we **DO NOT** recommend because of the possibility of shorting out a battery and starting a fire) you would find the following:

The **lithium-ion cells** can be either cylindrical batteries that look almost identical to AA cells, or they can be **prismatic**, which means they are square or rectangular.

The computer, which comprises:

1) One or more **temperature sensors** to monitor the battery temperature
2) A **voltage converter and regulator circuit** to maintain safe levels of voltage and current
3) A shielded **notebook connector** that lets power and information flow in and out of the battery pack
4) A **voltage tap**, which monitors the energy capacity of individual cells in the battery pack

5) A **battery charge state monitor**, which is a small computer that handles the whole charging process to make sure the batteries charge as quickly and fully as possible.

If the battery pack gets too hot during charging or use, the computer will shut down the flow of power to try to cool things down. If you leave your laptop in an extremely hot car and try to use the laptop, this computer may prevent you from powering up until things cool off. If the cells ever become completely discharged, the battery pack will shut down because the cells are ruined. It may also keep track of the number of charge/discharge cycles and send out information so the laptop's battery meter can tell you how much charge is left in the battery.

It's a pretty sophisticated little computer, and it draws power from the batteries. This power draw is one reason why lithium-ion batteries lose 5 percent of their power every month when sitting idle.

Task 4 Render the text

As with most batteries you have an outer case made of metal. The use of metal is particularly important here because the battery is pressurized. This metal case has some kind of pressure-sensitive **vent hole**. If the battery ever gets so hot that it risks exploding from over-pressure, this vent will release the extra pressure. The battery will probably be useless afterwards, so this is something to avoid. The vent is strictly there as a safety measure. So is the **Positive Temperature Coefficient (PTC)** switch, a device that is supposed to keep the battery from overheating.

This metal case holds a long spiral comprising three thin sheets pressed together:

- A **Positive electrode**
- A **Negative electrode**
- A **separator**

Inside the case these sheets are submerged in an organic solvent that acts as the electrolyte. Ether is one common solvent.

The separator is a very thin sheet of microperforated plastic. As the name implies, it separates the positive and negative electrodes while allowing ions to pass through.

The positive electrode is made of Lithium cobalt oxide, or $LiCoO_2$. The negative electrode is made of carbon. When the battery charges, ions of lithium move through the electrolyte from the positive electrode to the negative electrode and attach to the carbon. During discharge, the lithium ions move back to the $LiCoO_2$ from the carbon.

The movement of these lithium ions happens at a fairly high voltage, so each cell produces 3.7 volts. This is much higher than the 1.5 volts typical of a normal AA alkaline cell that you buy at the supermarket and helps make lithium-ion batteries more compact in small devices like cell phones. See **How Battery works** for details on different battery chemistries.

We'll look at how to prolong the life of a lithium-ion battery and explore why they can explode next.

Lithium-ion Battery Life and Death

Lithium-ion battery packs are expensive, so if you want to make yours to last longer, here are some things to keep in mind:

1) Lithium ion chemistry prefers **partial discharge** to **deep discharge**, so it’s best to avoid taking the battery all the way down to zero. Since lithium-ion chemistry does not have a “memory”, you do not harm the battery pack with a partial discharge. If the voltage of a lithium-ion cell drops below a certain level, it’s ruined.

2) Lithium-ion batteries **age**. They only last two to three years, even if they are sitting on a shelf unused. So do not “avoid using” the battery with the thought that the battery pack will last five years. It won’t. Also, if you are buying a new battery pack, you want to make sure it really is new. If it has been sitting on a shelf in the store for a year, it won’t last very long. Manufacturing dates are important.

3) Avoid heat, which degrades the batteries.

Exploding Batteries

Now that we know how to keep lithium-ion batteries working longer, let's look at why they can explode.

If the battery gets hot enough to ignite the electrolyte, you are going to get a fire. There are video clips and photos on the Web that show just how serious these fires can be. The CBC article, "Summer of the Exploding Laptop," rounds up several of these incidents.

When a fire like this happens, it is usually caused by an internal short in the battery. Recall from the previous section that lithium-ion cells contain a separator sheet that keeps the positive and negative electrodes apart. If that sheet gets punctured and the electrodes touch, the battery heats up very quickly. You may have experienced the kind of heat a battery can produce if you have ever put a normal 9-volt battery in your pocket. If a coin shorts across the two terminals, the battery gets quite hot.

In a separator failure, that same kind of short happens inside the lithium-ion battery. Since lithium-ion batteries are so energetic, they get very hot. The heat causes the battery to vent the organic solvent used as an electrolyte, and the heat (or a nearby spark) can light it. Once that happens inside one of the cells, the heat of the fire cascades to the other cells and the whole pack goes up in flames.

It is important to note that fires are very rare. Still, it only takes a couple of fires and a little media coverage to prompt a recall.

Task 5 Render the text

Industrial Engineering and Automation

A major advance in the twentieth century manufacturing was the development of mass production techniques. Mass production refers to manufacturing processes in which an assembly line, usually a conveyer belt, moves the product to stations where each worker performs a limited number of operations until the product is assembled. In the automobile assembly plant such systems have reached a highly-developed form. A complex system of conveyer belts and chain drives moves car parts to workers who perform the thousands of necessary assembling tasks.

Mass production increases efficiency and productivity to a point beyond which the monotony of repeating an operation over and over slows down the workers. Many ways have been tried to increase productivity on assembly lines: some of them are as superficial as piping music into the plant or painting the industrial apparatus in bright colors; others entail giving workers more variety in their tasks and more responsibility for the product.

These human factors are important considerations for industrial engineers who must try the balance an efficient system of manufacturing with the complex needs of workers.

Another factor for the industrial engineer to consider is whether each manufacturing process can be automated in whole or in part. Automation is a word coined in the 1940s to describe processes by which machines do tasks previously performed by people. The word was new but the idea was not. We know of the advance in the development of steam engines that produced automatic valves. Long before that, during the Middle Ages, windmills had been made to turn by taking advantage of changes in the wind by means of devices that worked automatically.

Automation was first applied to industry in continuous-process manufacturing such as refining petroleum, making petrochemicals, and refining steel. A later development was computer-controlled automation of assembly line manufacturing, especially those in which quality control was an important factor.

Task 6 Render the text

Principals of Tuning

Resonant circuits. In the design and operation of electronic systems resonant circuits provide the key to frequency control. When a certain frequency is to be produced, it is necessary to establish a circuit which is resonant at that frequency. Also, when a certain frequency is to be passed through a circuit and others eliminated, it is necessary to have a circuit which is resonant at the frequency to be passed. When a certain frequency is to be blocked, it is necessary to place in the circuit a resonant tank circuit, which will block the frequency for which it is resonant. Resonant circuits are most essential in radio and television receivers and transmitters.

Filters. The characteristics of resonant circuits, as just described, make them very useful for filtering various frequencies in an electronic circuit. Among the types of filters used in electronic circuits are high-pass filters, low-pass filters, and band-pass filters. A high-pass filter tends to pass frequencies in the higher ranges and to attenuate or reduce the current at frequencies in low ranges. The low-pass filter will pass frequencies in the lower ranges and attenuate or reduce the current frequencies of the higher ranges. A band-pass filter will allow a certain band of frequencies to pass and will reduce the current at frequencies below or above the band range. A filter may be made a tuning circuit by making either the inductance or the capacitance variable. A typical tuning circuit consists of a variable capacitor used with a fixed inductance. In some cases, however, the capacitor is fixed and the inductance is tuned by means of a "slug" or movable core. Tuning circuits are usually designed to have fairly high selectivity, that is, they allow only a very narrow band of frequencies to pass and reject all others.

Task 7 Render the text

The Electron Tube

It may be stated that the modern electronic industry was born with the invention of the electron tube. The first discoveries in electron-tube phenomena were made by Thomas Edison in 1883 during his experiments with the incandescent lamp. Edison discovered that the heated filament of an incandescent lamp gives off electrons which pass to another electrode in the bulb and thus create an actual current flow from the filament to the other electrode, or plate.

The diode tube. An electron tube, also called a vacuum valve, consists of a glass or metal enclosure in which electrodes are placed and sealed in either a gaseous or an evacuated atmosphere. The simplest of electron tubes is the diode, which has two operating electrodes. One of these is the heated cathode, which emits the electrons, and the other is the plate or anode. The cathode may be directly heated or indirectly heated. The tube with the directly heated cathode utilizes the heated filament for the cathode, in this case the filament is coated with a special material which greatly increases the number of electrons emitted. If the tube has an indirectly heated cathode, the cathode consists of a metal tube in the centre of which is a filament or heater. The heater is insulated from the metal tube. The outside of the cathode tube is covered with an electron-emitting material such as barium oxide, strontium oxide or thorium oxide.

The principal advantage of the diode tube is that it permits the flow of current in one direction only, that is, from the heated cathode to the anode. If an alternating current is applied to the cathode, the tube will conduct only during one half of each cycle, that is, while the cathode is negative and the anode or plate is positive. For this reason diode tubes are often used as rectifiers

to change alternating current to direct current. Diode tubes are used in the power-supply circuits of such electronic devices as radio and television, which obtain their primary power from a. c. sources.

Another use of the diode tube is as a detector. In this application the tube changes the h. f. a. c. carrier wave into a direct current which displays the modulation of the a. f. signal, separates the audio portion of a radio signal from the r. f. portion which is the carrier wave.

The triode tube. The triode tube was discovered by Dr. Lee De Forest. De Forest found that by adding a third element to the diode tube the electron flow from the cathode to the plate could be effectively controlled by changing the electrical charge on the grid placed between them.

The effect of the grid in a triode makes it possible for the tube to act as an amplifier, that is, small changes in voltage on the grid will cause very substantial changes in the current flow from the cathode to the plate.

Task 8 Render the text

Transistors

Among the most important discoveries in electronics during recent years is the invention of the transistor. The transistor is a very small device which is replacing and is doing the work of a much larger electron tube. One of its principal advantages, however, is that no current is required for a heater circuit, as the transistor works at room temperature. During operation a transistor becomes heated, and so it is necessary to make certain that the transistor circuit is not overloaded beyond its operating limits.

Semiconductors. The operation of a transistor depends upon the nature and characteristics of a crystal substance such as germanium, or silicon. Pure germanium and silicon are good insulators because there are no free electrons to carry current through the material. However, when a very small percentage of an impurity is added, their crystal lattice structure remains the same, but the extra electrons brought in by the impurity remain free in the material to act as current carriers. This makes the material a semiconductor, that is, it will carry current in one direction and block the flow of current in another direction. Germanium with an impurity which leaves an excess of electrons in the material is called *n*-type germanium because of its negative characteristic. When an impurity such as aluminium is added to germanium, *p*-type germanium is formed. This is because aluminium atoms have fewer valence electrons, and when combined with germanium, they leave vacant spots or holes where an electron should be in order to balance the charges between the atoms. A current flow in *p*-type germanium, electrons move into the holes, leaving other holes at the points from which they came. This is the hole current.

Junction transistor. There are two principal types of transistors: the point-contact transistor and the junction transistor.

A junction transistor consists of three principal sections and may be manufactured as one piece. In a *n*-*p*-*n* transistor the crystal consists of a section of *n*-type germanium, and another larger section of *n*-type germanium. One end of this transistor is called the emitter, the small *p*-type section is called the base, and the other end is called the collector. The collector is biased positive with respect to the base; hence there will normally be no current flow across the base-to-collector junction. The positive collector will draw the electrons away from the junction and the negative base will draw the holes away from the junction, and so there can be no transfer of holes or electrons at this point. Since the emitter is negative with respect to the base, the electrons will flow from the emitter to the base and the holes will move from the base to the emitter. This results in a substantial flow of electrons from the emitter to the base, and since the base is very thin, these electrons move across the base and into the positively charged collector.

The result is that a substantial collector current will flow. This collector current will vary in accordance with the changes of the current flow across the emitter-to-base junction. Generally speaking, we may consider the operation of this transistor similar to that of a triode tube with the emitter representing the cathode, the base representing the control grid and the collector representing the plate.

The advantages of a transistor are its very small size and weight, the fact that no power is necessary for heating it, and its comparatively rugged construction.

Task 9 Render the text

Electrical Power and Horsepower

The development of the electromagnet was the beginningйg of the use of electricity for producing power, power to be used by man to run his machines and to do much of his work. ln modern home alone, there are at least a dozens of electric motors in machines to tell the time, to wash and press cloths, to cool the refrigerator, to mix and stir foods, to clean the rugs, to circulate air in a warm room and so on.

Electric motors in the automobile start the car and circulate the warm air from the heater. In the factories, on the farms, and in the mines the electric motor does all types of work and oftenп very heavy work.

What is power? One might ash. Power is measured energy, usually represented as the energy measured by the amount of work a horse can do in a given time. One horsepower is equal to the work done by lifting 550 pounds 1 foot in 1 second. Therefore, power involves three things: weight, time and distance.

Motors are rated in horsepower or fractions of horsepower, for instance, the motor used in a typical washing machine is usually a 1/4 horsepower. Thus, the motor of this kind is known to be termed fractional horsepower motor.

Task 10 Render the text

Types of resistor

Resistors are the most fundamental and commonly used of all the electronic components, to the point where they are almost taken for granted but they play a vital role within a circuit.

There are many different **Types of Resistor** available for the electronics constructor to choose from, from very small surface mount chip resistors up to large wire wound power resistors.The principal job of a resistor within an electrical or electronic circuit is to “resist” (hence the name **Resistor**), regulate or to set the flow of electrons (current) through them by using the type of conductive material from which they are composed.

Resistors can also be connected together in various series and parallel combinations to form resistor networks, which can act as voltage droppers, voltage dividers or current limiters within a circuit.

Resistors are what are called “Passive Devices”, that is they contain no source of power or amplification but only attenuate or reduce the voltage or current signal passing through them. This attenuation results in electrical energy being lost in the form of heat as the resistor resists the flow of electrons through it.

Then a potential difference is required between the two terminals of a resistor for current to flow. This potential difference balances out the energy lost. When used in DC circuits the po-

tential difference, also known as a resistors voltage drop, is measured across the terminals as the circuit current flows through the resistor.

Most types of resistor are linear devices that produce a voltage drop across themselves when an electrical current flows through them because they obey Ohm's Law, and different values of resistance produces different values of current or voltage. This can be very useful in Electronic circuits by controlling or reducing either the current flow or voltage produced across them we can produce a voltage-to-current and current-to-voltage converter.

There are many thousands of different **Types of Resistor** and are produced in a variety of forms because their particular characteristics and accuracy suit certain areas of application, such as High Stability, High Voltage, High Current etc, or are used as general purpose resistors where their characteristics are less of a problem.

Some of the common characteristics associated with the humble resistor are **Temperature Coefficient, Voltage Coefficient, Noise, Frequency Response, Power** as well as a resistors **Temperature Rating, Physical Size** and **Reliability**.

In all Electrical and Electronic circuit diagrams and schematics, the most commonly used symbol for a fixed value resistor is that of a "zig-zag" type line with the value of its resistance given in Ohms, Ω. Resistors have fixed resistance values from less than one ohm, (<1Ω) to well over tens of millions of ohms, (>10MΩ) in value.

Fixed resistors have only one single value of resistance, for example 100Ω, but variable resistors (potentiometers) can provide an infinite number of resistance values between zero and their maximum value.

Task 11 Render the text

Conductors and insulators

Everything is made up of atoms. Each one of them has three particles: protons, neutrons and electrons. Electrons spin around the centre of an atom. They have a negative charge. Protons, which are in the centre of atoms, have a positive charge. Normally, an atom has as many protons as it has electrons. It is stable or balanced. Carbon, for example has six protons and six electrons. Scientists can make electrons travel from one atom to another. An atom that loses electrons is positively charged, an atom that gets more electrons is negatively charged. Electricity is created when electrons move between atoms. Positive atoms look for free negative electrons and attract them, so that they can be balanced.

Electricity can pass through some objects better than through others. Conductors are materials through which electrons can travel more freely. Copper, aluminium, steel and other metals are good conductors. So are some liquids like saltwater.

Insulators are materials in which electrons cannot move around. They stay in place. Glass, rubber, plastic or dry wood are good insulators. They are important for your safety, because without them, you couldn't touch a hot pan or plug in a TV set.

Electric current

When electrons move through a conductor an electric current is created. A current that always flows in one direction is called a direct current (DC). A battery for example, produces a direct current. A current that flows back and forth is called an alternating current (AC).

Electric circuits

Electrons cannot jump freely through the air to a positively charged atom. They need a circuit to move. When a source of energy, like a battery, is connected to a light bulb the electrons can move from the battery to the light bulb and back again. We call this an electric circuit.

Sometimes there are many circuits in an electrical device that make it work. A TV set or a computer may have millions of parts that are connected to each other in different ways.
You can stop the current from flowing by putting a switch into the circuit. You can open the circuit and stop electrons from moving.
A piece of metal or wire can also be used to produce heat. When an electrical current passes through such metal it can be slowed down by resistance. This causes friction and makes the wires hot. That's why you can toast your bread in a toaster or dry your hair with warm air from a hairdryer.
In some cases wires can become too hot if too many electrons flow through them. Special switches, called fuses, protect the wiring in many buildings.

Kinds of electricity

Static electricity

• happens when there is a build-up of electrons
• it stays in one place and then jumps to an object
• it does not need a closed circuit to flow
• it is the kind of electricity you feel when you rub your pullover against an object or when you drag your feet over a carpet
• lightning is a form of static electricity

Current electricity

• happens when electrons flow freely between objects
• it needs a conductor—something in which it can flow, like a wire
• current electricity needs a closed circuit
• it is in many electrical appliances in our homes - toasters, TV sets, computers
• a battery is a form of current electricity

How batteries work

A battery has liquid or paste in it that helps it produce electric charges. The flat end of the battery has a negative charge and the end with the bump has a positive charge.
When you link a wire between both ends a current flows. When the current passes through a light bulb electric energy is converted into light.
The chemicals in the battery keep the ends charged and the battery going. As times passes, the chemical becomes weaker and weaker and the battery cannot produce any more energy.

How electricity is produced

Generators are used to transform mechanical energy into electrical energy. A magnet rotates inside a coil of wire. When the magnet moves, an electric current is produced in the wire.
Most power stations use turbines to make the generator rotate. Water is heated to make steam, which pushes the blades of the turbine. Gas, oil or coal can be used to heat the water. Some countries build power stations on rivers, where the moving water pushes the turbine blades.

How electricity is measured

Electricity is measured in watts, named after James Watt who invented the steam engine. It would take about 750 watts to equal one horsepower.
A kilowatt-hour is the energy of 1,000 watts that work for one hour. If, for example, you use a 100-watt light bulb for 10 hours you have used 1 kilowatt of electricity.

How electricity is transported

The electricity produced by a generator travels along cables to a transformer that changes the voltage of electricity. Power lines carry the high-voltage electricity over very long distances. When it reaches your home town another transformer lowers the voltage and smaller power lines bring it to homes, offices and factories.

Electrical safety

It is important to understand why and how you can protect yourself from electrical injuries.
Electric shock occurs when an electric current passes through your body. It can lead to heart failure and can damage other parts of your body. It can also burn your skin and other body tissues.

A very weak electrical object, like a battery, cannot do any harm to you, but inside the house you have devices and machines that use 220 volts.
Most machines in your house have safety features to protect you. If something goes wrong, a special wire leads the electricity to the ground where nothing can happen.
There are also electrical dangers outside your house. Trees that touch power lines can be dangerous. Lightning has more than enough electricity to kill a person. If you get caught in a thunderstorm stay away from open fields and high places. One of the safest places is your car, because lightning will only hit the outside metal of the car.

Task 12 Render the text

Solar light by night

Most people living in towns consider it a usual thing that streets are lit at night. But street lights need a power supply (источник энергии) therefore distant areas with no source of electricity remain in darkness until the sun comes up again. With new appliances now offered by several British firms, many distant places could be lit with solar-powered street lights. It may seem strange that the lamps can use the power of the sun which shines by day when the lamps are needed at night, but they work by using energy accumulated during the day from a solar panel. The solar panel produces electricity which charges (заряжать) a battery. When the sun goes down, the battery power is then used for lighting. Each lamp has its own panel so the system can be used for one individual light or a number of them. In the south of Saudi Arabia a motorway tunnel miles from any power supply is lit day and night by solar-powered devices. The solar panels provide power during the day and charge batteries which accumulate enough power to light the tunnel at night. The generation of electricity by batteries is still expensive but the advantage of sun-powered lamps is that they can bring light to areas distant from any other power supply. There is one more advantage of solar power: not only it is unlimited, but also its use does not pollute the environment. That is why it is very important to develop devices which make it possible to transform solar power into mechanical or electric forms of power.

Task 13 Render the text

Energy

In the language of science energy is the ability to do work. There are various forms of energy, such as heat, mechanical, electrical, chemical, atomic and so on. One might also mention the two kinds of mechanical energy–potential and kinetic, potential energy being the energy of position while kinetic energy is the energy of motion. It is well known that one form of energy can be changed into another. A waterfall may serve as an example. Water falling from its raised position, energy changes from potential to kinetic energy. The energy of falling water is generally used to turn the turbines of hydroelectric stations. The turbines in their turn drive the electric generators, the latter producing electric energy. Thus, the mechanical energy of falling water is turned into electric energy. The electric energy, in its turn, may be transformed into any other necessary form. When an object loses its potential energy, that energy is turned into kinetic energy. Thus, in the above-mentioned example when water is falling from its raised position, it certainly loses its potential energy, that energy changing into kinetic energy. We have already seen that energy of some kind must be employed to generate the electric current. Generally speaking, the "sources of energy usually employed to produce current are either chemical as in the battery, or mechanical, as in the electromagnetic generator. Chemical sources of current having a limited application, the great quantities of electric energy generated today come from various forms of mechanical energy. The rising standards of modern civilization and growing industrial application of the electric current result in an increasing need of energy. Every year we need more and

more energy. We need it to do a lot of useful things that are done by electricity. However, the energy sources of the world are decreasing while the energy needs of the world are increasing. These needs will continue to grow as more motors and melted metals are used in industry and more electric current is employed in everyday life. As a result, it is necessary to find new sources of energy. The sun is an unlimited source of energy. However, at present, only a little part of solar energy is being used j directly. How can we employ solar energy directly to produce useful energy? This is a question which has interested scientists and inventors for a long time. Lavoisier and other great scientists of the past melted metals with the help of solar furnaces. Today, solar furnaces illustrate just one of the numerous ways to harness the sun. Using semiconductors, scientists, for example, have transformed solar energy into electric energy.

Task 14 Render the text

Atomic energy

A man trying to see a single atom is like a man trying to see a single drop of water in the sea while he is flying high above it. He will see the sea made up of a great many drops of water but he certainly will not be able to see a single drop. By the way, there are so many atoms in the drop of water that if one could count one atom a second, day and night, it would take one hundred milliard years. But that is certainly impossible. Man has, however, learned the secret of the atom. He has learned to split atoms in order to get great quantities of energy. At present, coal is one of the most important fuel and our basic source of energy. It is quite possible that some day coal and other fuel may be replaced by atomic energy. Atomic energy replacing the present sources of energy, the latter will find various new applications. The nuclear reactor is one of the most reliable "furnaces" producing atomic energy. Being used to produce energy, the reactor produces it in the form of heat. In other words, atoms splitting in the reactor, heat is developed. Gas, water, melted metals, and some other liquids circulating through the reactor carry that heat away. The heat may be carried to pipes of the steam generator containing water. The resulting steam drives a turbine, the turbine in its turn driving an electric generator. So we see that a nuclear power-station is like any other power-station but the familiar coal-burning furnace is replaced by a nuclear one, that is the reactor supplies energy to the turbines. By the way, a ton of uranium (nuclear fuel) can give us as much energy as 2.5 to 3 million tons of coal. The first industrial nuclear power-station in the world was constructed in Obninsk not far from Moscow in 1954. It is of high capacity and has already been working for many years. One may mention here that the station in question was put into operation two years earlier than the British one and three and a half years earlier than the American nuclear power-stations. A number of nuclear power-stations have been put into operation since 1954. The Beloyarskaya nuclear power-station named after academician Kurchatov may serve as an example of the peaceful use of atomic energy in the USSR. Soviet scientists and engineers achieved a nuclear superheating of steam directly in the reactor itself before steam is carried into the turbine. It is certainly an important contribution to nuclear engineering achieved for the first time in the world. We might mention here another important achievement, that is, the first nuclear installation where thermal energy generated in the reactor is transformed directly into electrical energy. Speaking of the peaceful use of atomic energy it is also necessary to mention our nuclear ice-breakers. "Lenin" is the world's first ice-breaker with a nuclear installation. Its machine installation is of a steam turbine type, the steam being produced by three reactors and six steam generators. This ice-breaker was followed by many others. The importance of atomic energy will grow still more when fast neutron reactors are used on a large scale. These reactors can produce much more secondary nuclear fuel than the fuel they consume.

Task 15 Render the text

Early history of electricity

Let us now turn our attention to the early facts, that is to say, let us see how it all started. History shows us that at least 2,500 years ago, or so, the Greeks were already familiar with the strange force (as it seemed to them) which is known today as electricity. Generally speaking, three phenomena made up all of man's knowledge of electrical effects. The first phenomenon under consideration was the familiar lightning flash –a dangerous power, as it seemed to him, which could both kill people and burn or destroy their houses. The second manifestation of electricity he was more or less familiar with was the following: he sometimes found in the earth a strange yellow stone which looked like glass. On being rubbed, that strange yellow stone, that is to say amber, obtained the ability of attracting light objects of a small size. The third phenomenon was connected with the so-called electric fish which possessed the property of giving more or less strong electric shocks which could be obtained by a person coming into contact with the electric fish. Nobody knew that the above phenomena were due to electricity. People could neither understand their observations nor find any practical applications for them. As a matter of fact, all of man's knowledge in the field of electricity has been obtained during the last 370 years, or so. Needless to say, it took a long time before scientists learned how to make use of electricity. In effect, most of the electrically operated devices, such as the electric lamp, the refrigerator, the tram, the lift, the radio, and so on, are less than one hundred years old. In spite of their having been employed for such a short period of time, they play a most important part in man's everyday life all over the world. In fact, we cannot do without them at present. So far, we have not named the scientists who contributed to the scientific research on electricity as centuries passed. However, famous names are connected with its history and among them we find that of Phales, the Greek philosopher. As early as about 600 B. C. (that Is, before our era) he discovered that when amber was rubbed, it attracted and held minute light objects. However, he could not know that amber was charged with electricity owing to the process of rubbing. Then Gilbert, the English physicist, began the first systematic scientific research on electrical phenomena. Rediscovered that various other substances possessed the property similar to that of amber or, in other words, they generated electricity when they were rubbed. He gave the name "electricity" to the phenomenon he was studying. He got this word from the Greek "electrum" meaning "amber". Many learned men of Europe began to use the new word "electricity" in their conversation as they were engaged in research of their own. Scientists of Russia, France and Italy made their contribution as well as the Englishmen and the Germans.

Task 16 Render the text

Electricity

It is impossible to imagine our civilization without electricity: economic and social progress will be turned to the past and our daily lives completely transformed. Electrical power has become universal. Thousands of applications of electricity such as lighting, electrochemistry and electrometallurgy are longstanding and unquestionable. With the appearance of the electrical motor, power cables replaced transmission shafts, gear wheels, belts and pulleys1 in the 19-th century workshops. And in the home a whole range of various time and labour saving appliances have become a part of our everyday lives. Other devices are based on specific properties of electricity: electrostatics in the case of photocopying machine and electromagnetism in the case of radar and television. These applications have made electricity most widely used. The first industrial application was in the silver workshops in Paris. The generator – a new compact source of electricity

– was also developed there. The generator replaced the batteries and other devices that had been used before. Electric lighting came into wide use at the end of the last century with the development of the electric lamp by Thomas Edison. Then the transformer was invented, the first electric lines and networks were set up, dynamos and induction motors were designed. Since the beginning of the 20th century the successful development of electricity has begun throughout the industrial world. The consumption of electricity has doubled every ten years. Today consumption of electricity per capita is an indicator of the state of development and economic health of a nation. Electricity has replaced other sources of energy as it has been realized that it offers improved service and reduced cost. One of the greatest advantages of electricity is that it is clean, easily-regulated and generates no by-products. Applications of electricity now cover all fields of human activity from house washing machines to the latest laser devices. Electricity is

Примеры заданий для промежуточной аттестации

Вариант 1

1. **Read the text**

THE NATURE OF ELECTRICITY

Practical electricity is produced by small atomic particles known as electrons. It is the movement of these particles which produce the effects of heat and light.

The pressure that forces these atomic particles to move, the effects they encounter opposition and how these forces are controlled are some of the principles of electricity.

Accepted atomic theory states that all matter is electrical in structure. Any object is largely composed of a combination of positive and negative particles of electricity. Electric current will pass through a wire, a body, or along a stream of water. It can be established in some substances more readily than in others, that all matter is composed of electric particles despite some basic differences in materials. The science of electricity then must begin with a study of the structure of matter.

Matter is defined as any substance which has mass (or weight) and occupies space. This definition should be broad enough to cover all physical objects in the universe. Wood, water, iron, and paper are some examples of matter. Energy is closely related to, but not to be confused with, matter. Energy does not have mass, and it does not occupy space. Heat and light are examples of energy.

The smallest particle of matter which can be recognized as an original substance was thought to be a unit called the atom. Recently scientists have found particles even smaller than atoms, but our theories are still based on the atom. The atom consists of a nucleus and a cloud of electrons. It is generally agreed that the electrons are small particles of electricity, which are negative in nature. These particles orbit the nucleus in much the same fashion that planets orbit a sun.

2. Guess the meaning of the following international words:

Electricity, electron, effect, structure, combination, material, mass, energy, atom, orbit

3. Give the English equivalents for the words below:

1) производить; 2) частица; 3) тепло и свет; 4) напряжение; 5) сила; 6) вещество; 7) положительный; 8) отрицательный; 9) электрический ток; 10) вес; 11) ядро

4. Translate into Russian the words and expressions from the text:

1) atomic particle; 2) effects of heat and light; 3) encounter opposition; 4) principles of electricity; 5) composed (of); 6) pass through a wire; 7) structure of matter; 8) occupy space; 9) physical objects; 10) a cloud of electrons; 11) in the same fashion.

5. Complete the sentences using the text:

1. Electricity is produced by …
2. The effects of heat and light are produced by …

3. According to the accepted atomic theory all matter is …
4. Any object is composed of …
5. Matter is defined as …
6. Energy must not be confused with …
7. The atom consists of …
8. The smallest particle of matter is …
9. Most theories are based on …
10. Electrons are …

Вариант 2

№ 1 Read the text

ELECTRIC CURRENT

The electric current is a quantity of electrons flowing in a circuit per second of time. The unit of measure for current is ampere. If one coulomb passes a point in a circuit per second then the current strength is 1 ampere. The symbol for current is I.

The current which flows along wires consists of moving electrons. The electrons move along the circuit because the e .m. f. drives them. The current is directly proportional to the e. m. f.

In addition to traveling through solids, however, the electric current can flow through liquids as well and even through gases. In both cases it produces some most important effects to meet industrial requirements.

Some liquids, such as melted metals for example, conduct current without any change to themselves. Others, called electrolytes, are found to change greatly when the current passes through them.

When the electrons flow in one direction only, the current is known to be d. c., that is, direct current. The simplest source of power for the direct current is a battery, for a battery pushes the electrons in the same direction all the time (i.e., from the negatively charged terminal to the positively charged terminal).

The letters a. c. stand for alternating current. The current under consideration flows first in one direction and then in the opposite one. The a. c. used for power and lighting purposes is assumed to go through 50 cycles in one second. One of the great advantages of a. c. is the ease with which power at low voltage can be changed into an almost similar amount of power at high voltage and vice versa. Hence, on the one hand alternating voltage is increased when it is necessary for long-distance transmission and, on the other hand, one can decrease it to meet industrial requirements as well as to operate various devices at home.

Although there are numerous cases when d. c. is required, at least 90 per cent of electrical energy to be generated at present is a. c. In fact, it finds wide application for lighting, heating, industrial, and some other purposes.

2. Guess the meaning of the following international words:

electric, ampere, symbol, proportional, industrial, metal, electrolyte, battery, generate.

3. Give the English equivalents for the words and word combinations below:

1) течь, протекать; 2) цепь, схема; 3) единица измерения; 4) провод; 5) электродвижущая сила; 6) твердое тело; 7) жидкость; 8) проводить (ток); 9) источник энергии; 10) постоянный ток; 11) переменный ток; 12) напряжение.

4. Give Russian equivalents for the following:

1) to meet industrial requirements; 2) melted metals; 3) to push in the same direction; 4) negatively (positively) charged terminal; 5) power and lightning purposes; 6) long-distance transmission; 7) to operate devices; 8) to find wide application.

5. Say whether these sentences are true or false:

1. The symbol for current is I.
2. The electric current can flow only through liquids.

3. The current can be of two types: direct current and alternating current.
4. The alternating current flows in one direction.
5. A battery is the simplest source of power for the direct current.
6. Direct current finds wider application than alternating current.
7. Electrolytes don’t change greatly when current passes through them.
8. One of the great advantages of alternating current is the ease with which voltage can be changed.