

《机电工程专业英语》课后习题参考答案

模块一 单元一

1.1 Introduction to Mechanical design

2.翻译

设计可能是工程师所能从事的最令人兴奋和最令人满意的活动之一。看到自己创造性努力的成果变成真正的产品和过程，造福于人们，会有一种强烈的满足感和自豪感。要做好设计工作，需要具备一些特性。

3.填空题

of, into, as, at, within, of,

1.2 Engineering drawing

2.翻译

(1) Cartesian coordinate system is the basic coordinate system for drawing graphs with AutoCAD software. Various input methods (such as absolute coordinate and relative coordinate) all depend on this coordinate system.

The Cartesian coordinate system locates all points on an AutoCAD drawing by defining a series of positive and negative axes to locate positions in space.

(2) A total of 11 views appear in the text, they are: projection view, auxiliary view, general view, detailed view, revolved, full view, half view, broken view, section view, exploded drawing, partial view.

(3) General view is the view which is oriented by the user and is not dependent on any other view for its orientation.

(4) There are three classes of fit in the text, namely, clearance, transition and interference.

(5) When we consider dimensional limits, we need to consider the following factors: functional importance, interchangeability and economics.

3.填空题

(1) AutoCAD has two internal coordinate system, they are the World Coordinate System (WCS) and the User Coordinate System (UCS).

(2) There are many types of views in the text, namely, projection view, auxiliary view, general view, detailed view, revolved, full view, half view, broken view, section view, exploded drawing, and partial view.

(3) There are three classes of fit, namely clearance, transition and interference.

4.翻译题

(1) Coordinate system 坐标系

(2) Cartesian coordinate axes 笛卡尔坐标轴/直角坐标轴

(3) Keep track of 跟踪于，定位于

(4) World Coordinate System (WCS) 世界坐标系

(5) User Coordinate System (UCS) 用户坐标系

(6) Orthographic projection 正交投影

(7) Projection plane 投影图

(8) Partial view 局部视图

(9) Degree of tolerance 公差等级

(10) Home and abroad 国内国外

5. 翻译题

(1) AutoCAD 有两个内部坐标系：世界坐标系（WCS）和用户坐标系（UCS），用来帮助你确定你在绘图区中的位置。

(2) 固定的笛卡尔坐标系可以通过定义一系列用以确定空间位置的正负轴来标记 AutoCAD 图上的所有点。

(3) 有一个作为参考点的固定原点（0,0），x 轴从原点出发沿着水平方向向左右延伸，y 轴从原点出发沿着垂直方向上下延伸。

(4) 第一有必要了解这个元件的用途，第二要了解失效场合下它的替换性，第三要考虑避免在生产上花费不必要的时间和金钱。

6.略

1.3 Computer Aided Design

2.略

3.

(1) aesthetically (2) capable, scaling, performing (3) dimensioned (4) have been determined (5) broken down into (6) conceptualize, alternative

4.

(1) CAD-Computer aided Design 计算机辅助设计

(6) be broken down into 被分解成

(2) DEX-Drawing exchange format 图形交换格式

(7) be based on 以...为基础

(3) IGES-initial graphics exchange specification 初始图形交换规范

(8) be associated with 与某个事物或

(4) ISO-International Organization for Standardization 国际标准化组织

行为有关联

(5) be capable of 有能力做某事

(9) consist of 由...组成

(10) allow for 考虑到，预留

5.

(1) 几何建模- geometric modeling

(4) 设计评审- design review

(2) 几何特征- geometrical characteristic

(5) 设计优化- design optimization

(3) 软件包- software package

(6) 八叉树表示方法- Octree representation

6.略

1.4 Mould design and manufacturing

2.翻译:

(1) 当今工业中使用的最常见的模具类型是(1)两板模具，(2)三板模具，(3)滑动式模具，(4)退扣式模具。

(2) 双板模具由两个活动板组成，型腔和芯镶件安装在两个活动板上。在这种模具类型中，流道系统、浇口、流道和浇口与被成型的零件一起凝固，并作为一个单独的连接项目弹出。因此，双板模具的操作通常需要连续的机器出勤。

(3) 模具制造过程早期的一个重要决策是需要确定将使用何种加工操作以及以何种顺序进行加工。在 CAD 模型的开发过程中，应分析加工因素。如果不这样做，程序员可能无法实施某些加工策略。

(4) 在制作精密模具时，每种工艺都有优点和缺点。正确选择工艺和工艺顺序，不仅可以实现更精确的尺寸控制，而且可以减少台架作业，缩短制造时间。

3.填空题

for, of, for, of

模块一 单元二

2.1 Material forming

2.翻译

(1) 陶瓷工具是战后引进的, 尚未在一般工厂使用。它们最有可能的应用是在超高速下切割金属, 其速率超出了硬质合金刀具的极限。陶瓷能抵抗切削瘤的形成, 因此产生良好的表面精度。

(2) 由于当前所设计的机床, 其动力仅能用于开发硬质合金工具, 就目前而言, 陶瓷很可能被限制在高速精加工的应用场景中, 在高速精加工中, 机床动力充足、切割量微小。尽管时下, 陶瓷刀具可以用于铣削, 但陶瓷刀具的极端脆性在很大程度上限制了它们在连续切削中的使用。

3.For, as, into, to

2.2 Metal cutting processes

2.翻译

未变形状态下的切屑宽度 b 是沿切削刃在垂直于切削方向的平面上测得的切屑宽度。

3.填空题

to, of, from

2.3 Milling operations

2.翻译:

(1) 在逆铣切割开始时, 切削刃的初始摩擦往往会使切削刃变钝, 因此刀具寿命较低。

(2) 此外, 由于刀具倾向于切削和滑动交替, 用这种方法获得的加工表面质量不是很高。

3.as, to, with

2. 4 Heat treatment of metal

2.翻译

(1) 进行了两种特殊类型的淬火, 以尽量减少淬火应力、变形和开裂的趋势。在这两种方法中, 淬火钢在冷却之前, 需要在选定的低温盐浴中完成淬火。

(2) 被称为等温淬火和分级淬火的这些工艺过程, 能使产品具有某些理想的物理性能。

3.to, of, of

4.问答题

(1) What is the purpose of full annealing?

The primary purpose of annealing is to soften hard steel so that it may be machined or cold worked.

(2) What is the word machinability used to describe?

The machinability of many of the higher plain carbon steels and most of the alloy steels can usually be greatly improved by annealing, as they are often too hard and strong to be easily cut at any but their softest condition.

(3) What is the purpose of normalizing?

The process of normalizing consists of heating the steel about 10t to 40t above the upper critical range and cooling in still air to room temperature. This process is principally used with low and medium-carbon steels as well as alloy steels to make the grain structure more uniform, to relieve internal stresses, or to achieve desired results in physical properties.

(4) What does martempering mean?

Martempering is also called fractional quenching below the martensitic point. The austenitized steel is placed in a quenching medium at a temperature slightly lower than the martensitic transition temperature for a certain period of time, so that part of the martensitic transformation occurs, and then removed in the air cooling a quenching process.

(5) What does austempering mean?

Austempering is a heat treatment process in which the workpiece after austenitizing is isothermal quenched in the lower bainite region for a period of time (without completing the transformation of the lower bainite), and the air cooling is removed from the natural bath to obtain the lower bainite, martensite and residual austenite.

(6) What is tempering?

Steel that has been hardened by rapid quenching is brittle and not suitable for most uses. By tempering or drawing, the hardness and brittleness may be reduced to the desired point for service conditions.

(7) What process is used to remove the internal stresses created during a hardening operation?

With the proper heat treatment internal stresses may be removed, grain size reduced, toughness increased, or a hard surface produced on a ductile interior.

(8) What heat treating process makes the metallic carbides in a metal form into small rounded globules?

Spheroidizing annealing. Spheroidizing is the process of producing a structure in which the cementite is in a spheroidal distribution. If a steel is heated slowly to a temperature just below the critical range and held there for a prolonged period of time, this structure will be obtained. The globular structure obtained gives improved machinability to the steel. This treatment is particularly useful for hypereutectoid steels that must be machined.

(9) What are the main purposes of heat treating?

Heat treatment is the operation of heating and cooling a metal in its solid state to change its physical properties. According to the procedure used, steel can be hardened to resist cutting action and abrasion, or it can be softened to permit machining. With the proper heat treatment internal stresses may be removed, grain size reduced, toughness increased, or a hard surface produced on a ductile interior.

(10) How many heat treating processes are involved in ferrous materials?

There are 9 main heat treatment methods, they are annealing, normalizing, spheroidizing, quenching, tempering, aging, carburizing, nitriding.

5.翻译

(1) 普通低碳钢、亚共析钢、正火钢、过共析钢、约 60°C 以上的 A_{c1} 温度、冷却速率、淬火中热应力、回火钢在回火或拉丝过程中淬硬钢、完全退火

(2) Crystal, workability, hypoeutectoid, austenite, normalizing, playing an increasingly important role, cementite, spheroid, hypereutectoid, martensite, tempering, quenching, isothermal quenching, fractional quenching, tempering, pounds per square inch. Spheroidization (treatment), elasticity, modulus

模块二 单元一

1.1 Application of NC technology

2.翻译

(1) 使用穿孔纸带或存储程序控制机床称为数控(NC)。数控被电子工业协会(EIA)定义为“通过在某一点上直接插入数字数据来控制动作的系统”。

(2) 系统必须至少能自动解释部分数据”。生产零件所需的数值数据称为零件程序。

3.填空题

(1) into (2) from, on (3) to, (4) with

1.2 Numerical control machine tool

2.翻译:

(1) 开环控制可用于负载条件无变化的应用场合,如数控钻床。开环控制系统的优点是它更便宜,因为它不需要额外的硬件和定位反馈所需的电子设备。

(2) 缺点是难以检测定位误差。

3. 填空题

(1) to (2) in, to (3) over (4) on, to

1.3 NC programming

2.翻译:

(1) T 码用于指定工具编号。它只在有自动换刀器的机床使用。

(2) 它指定了下一个刀具所在的刀盘上的槽号。在确定了刀具在更改 M 代码之前,不会发生实际的更改。

3. 填空题

(1) to (2) to (3) to (4) between (5) to

模块二 单元二

2.1 Introduction of mechatronics

2.翻译

在汽车工业中，可以观察到机电一体化创新方向最明显的趋势。曾几何时，汽车因配备了少量电子附件而一跃成为机械奇迹。

3.

(1) to (2) up (3) to, on (4) on (5) in (6) than (7) with, for

2.2 SCM

2.翻译

(1) CPU 是微控制器的大脑，读取用户的程序并按照存储在其中的指令执行预期的任务。

(2) 它的主要元素是 8 位算术逻辑单元(ALU)，累加器(Acc)，更多的 8 位寄存器，B 寄存器，堆栈指针(SP)，程序状态字(PSW)和 16 位寄存器，程序计数器(PC)和数据指针寄存器(DPTR)。

(3) ALU (Acc)对 8 位输入变量执行算术和逻辑功能。算术运算包括基本的加法、减法、乘法和除法。

3.解答：

(1)The CPU is the brain of the microcontrollers reading user's programs and executing the expected task as per instructions stored there in.

(2) The primary elements of CPU are an 8 bit Arithmetic Logic Unit (ALU), Accumulator (Acc), few more 8 bit registers, B register, Stack Pointer (SP), Program Status Word (PSW) and 16 bit registers, Program Counter (PC) and Data Pointer Register (DPTR).

(3)The ALU (Acc) performs arithmetic and logic functions on 8 bit input variables.

(4) B register is mainly used in multiply and divide operations. During execution, B register either keeps one of the two inputs and then retains a portion of the result. For other instructions, it can be used as another general purpose register. Program Status Word keeps the current status of the ALU in different bits.

(5)P1 and P3 are available for standard I/O functions.

2.3 PLC

2.翻译

(1) 图中显示了一个简单控制应用程序中的继电器示例。在这个系统中，左边的第一个继电器用作常闭开关，允许电流流动，直到电压施加到输入端 A 时才截止通流。

(2) 第二个继电器是常开的，直到电压施加到输入端 B，才允许电流流过。

3.

(1)

1. computer, programmable logic controller,

2.ladder diagram, programming, relay, .

3. power supply

(2)

1.F 2. F 3.T 4.T 5.T

2.4 Sensor technology

2.

1. 指纹识别	a. fingerprint identification
2. 卫生保健	b. macroscopic
3. 消费品	c. ultrasonic
4. 能源开发	d. health care
5. 纳米技术	e. energy exploitation
6. 超声波	f. nanotechnology technology
7. 宏观的	g. microscopic
8. 微观的	h. consumer product

3. 翻译

(1) 生物传感器是一种用于检测分析物质的装置，它将生物组分与物理化学检测器组分结合在一起。矿工用笼子里的金丝雀来警告瓦斯，这可以被认为是一种生物传感器。

(2) 今天，许多生物传感器的应用都是类似的，因为它们使用对有毒物质的反应比我们低得多的生物体来警告我们有毒物质的存在。这种装置既可用于环境监测，也可用于水处理设施。

4. 填空题

(1) of (2) to

2.5 CAD/CAM

2. 翻译:

(1) Die core, ball-head matte, die cavity, knife tip rounded end matte, solid model, perpendicular to the upper surface, design modeling, operating system, computer graphics, general software, process formulation, factory management, database, tool trajectory, part shape.

(2) 修改，绘制仪器，图纸存档，时间密集，默认设置，刀具路径，计算机辅助制造，在线装配，用户程序，物料清单，刀具。.

(3) 为消除这个来回绘图的步骤，有人想出了一个好主意，集成 CAD/ CAM 应运而生。

(4) 制造工程师或 NC 程序员使用 CAD 软件评估和修复设计 CAD 数据与制造数据之间的公差。

(5) 创建模型只是开发客户新部件的第一步。为了使零件投入生产，需要一个通用的凸轮系统来导入模型并转换表面进行加工。

(6) 通常会产生 10,000 到 100,000 个单独的刀具路径移动，单个移动中的错误会完全叫停固体切削，任何误差都会导致粗糙度恶化。

(7) CAD/CAM 是一个统一的软件系统，其中 CAD 部分在计算机内部与 CAM 系统对接。

(8) 然而，在不久的将来，一些公司将根本不使用图纸，而是通过数据库将零件信息直接从设计传递到制造。

(9) Computer aided design technology is an advanced design technology.

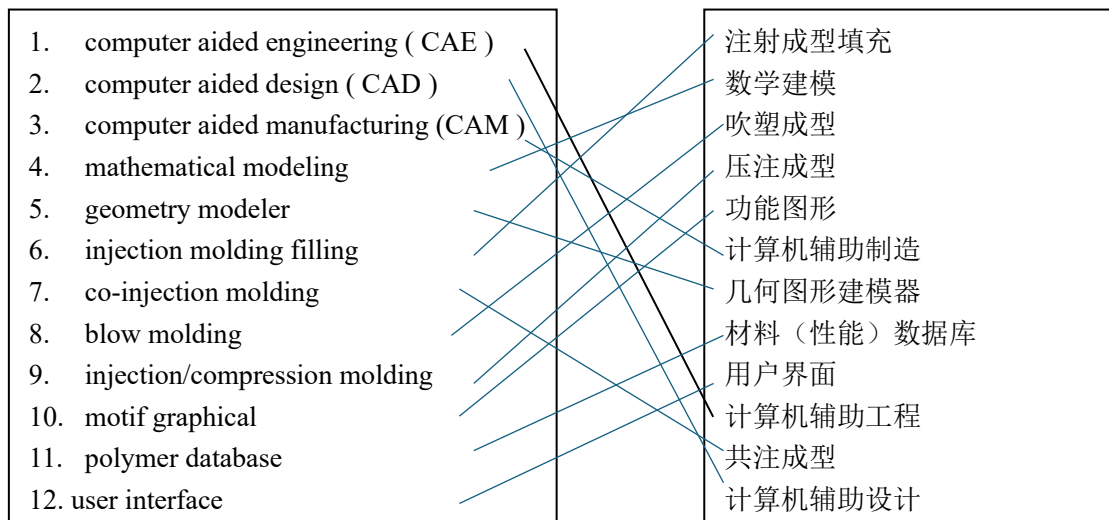
(10) Computer aided manufacturing can greatly improve product quality.

3.

略

2.6 CAE/CIMS

2.



3.翻译

(1)聚合物加工涉及固体(有时是液体)聚合物树脂的转化, 这种树脂是随机形式的(例如粉末, 颗粒, 珠子), 到特定形状, 尺寸和性能的固体塑料产品。

(2)注射成型是一个不连续的过程, 非常复杂, 取决于材料性能、产品和模具几何形状以及工艺参数。

(3)C-MOLD 作为仿真软件之一, 是一套针对塑料成型过程的集成 CAE 仿真软件。

(4)不仅主要原材料制造商将模拟作为一种服务来支持他们的销售工作;工程咨询公司也提供这项服务, 因此, 模拟技术现在在中小型企业中获得了立足点。

(5)raw materials, finished products, modern manufacturing, market research, automation, product quality, computer integrated manufacturing systems

4

解答:

(1) 为什么使用聚合物加工模拟来控制工艺和产品质量?

Because C-MOLD, like polymer processing simulation can provide solutions in all stages of design and manufacturing, to improve productivity and enhance part quality.

(2)有多少软件供应商?C-MOLD 软件可以模拟哪些聚合物加工?

There are 6 major suppliers of computer Aided engineering (CAE) software, which are:

1.Agilent - provides EDA solutions;

2.BMW - provides CAE software and services;

3.Dassault Systemes - offers software packages such as CATIA and SIMULIA;

4.ANSYS - offers a wide range of engineering simulation software;

5.Altair - the world's leading computer aided engineering software platform;

6.Siemens - offers a comprehensive range of industrial software solutions, including PLM, CAD, CAE and CAM.

Polymer processes that C-MOLD software can simulate are: injection molding filling, post-filling, and cooling; part shrinkage and warpage; co-injection molding; gas-assisted injection molding, reactive molding; blow molding; thermoforming; injection/compression molding; and microchip encapsulation.

(3)工艺计算软件(如 C-PITA)已经过测试并适应了模压成型, 对吗?

I don't know. This software is not mentioned in the article.

(4)什么是 CIM?

CIM stands for Computer Integrated manufacturing, this is the term used to describe the most modern approach to manufacturing.

(5) CIM 和 CNC 是什么关系?它与 CAD,CAM,JIT 的关系呢?

CIM is a comprehensive concept that includes many other advanced manufacturing technologies such as computer numerical control (CNC), CAD/CAM, robotics and just-in-time (JIT) delivery.

(6)现代制造业和传统制造业的区别是什么?

Modern manufacturing encompasses all of the activities and processes necessary to convert raw materials into finished products, deliver them to the market and support them in the fields.

Traditional manufacturing is almost entirely concerned with the process of product conversion

(7)在这篇文章中,“整合”一词是什么意思?

In this text, integration means that a system can provide complete and instantaneous sharing of information.

(8)你能告诉我们 CIMS 的一些好处吗?

Integrated manufacturing firms will reap a number of benefits from CIM, including: (1) Product quality increases;(2) Lead time is reduced;(3) Direct labor costs are reduced;(4) Product development time is reduced;(5) Inventories are reduced;(6) Overall productivity increases;(7) Design quality increases.

5.

(1) F (2) T (3) T (4) F (5) F (6) T

模块三 单元一

1.1 Thermal Storage

2 翻译题

(1)当能量获取的周期比能量使用的周期长时,热存储允许用比实际需要的加热或冷却(功率)更小的设备。

(2)在许多情况下,储能既能为当下,也能为一年内其它的时间段内的供热或供冷提供便利。

3.填空题

【答案】

(1)F; (2)T; (3)T; (4)F; (5)T

【解析】

(1)错,表述太绝对。绝缘材料不仅用于抵抗热流的目的,还可用于防止结露、防腐蚀等。

(2)对,但是不全。保温材料的选择应以成本和物理特性为基础,还应考虑其化学稳定性、耐久性、难燃性、施工方便程度、环保要求等因素。

(3)对。

(4)错,表述与物理逻辑相反。对于相同的温差,垂直空域和水平空域的换热量不同,垂直空域的换热量大于水平空域的换热量。

(5)对。

1.2 Tools and Equipment

2 翻译

(1)十字螺丝刀的尖端呈星形,可与十字螺钉配合使用。这些螺丝常见于生产设备中。

(2)四个槽的存在保证了螺丝刀不会滑进螺钉头。

3

【答案】

(1)F; (2)T; (3)F; (4)T; (5)F

【解析】

(1)错误,概念错误。波登管压力表是由一端固定,另一端活动的弯曲金属管组成。其截面形状为椭圆形或扁平形,当内部承受压力时,非圆形截面逐渐变成圆形,活动端产生位移,通过机械转换机构使指针指示压力大小。

(2)正确。压力表确实可以使用膜片表(如膜盒压力表、膜片压力表)代替波登管。这些压力表使用膜片的弹性形变来测量压力,适用于不同的应用场景,例如膜盒压力表常用于测量气体微压和负压。

(3)错误,概念误用。波登管主要用于测量压力,而非导热系数。真空测量通常使用专门的真空计,如麦克劳德真空计(McLeod gauge)或电容薄膜真空计,而不是波登管压力表。

(4)正确。这种类型的压力计称为液体柱压力计或U形压力计,它们利用液体柱的高度差来测量压力。常见的液体包括水银和水,特别适用于低压测量。

5.错误。压力计可以用于测量各种范围的压力变化,包括微小的压力变化。例如,膜盒压力表就常用于测量微小压力和真空,精确度等级一般为2.5级。

1.3 Heat Exchanger

2.翻译

(1)当在壳侧使用液体时,总是由下喷嘴引入,由上喷嘴流出。

(2)这样,工程师就可以确信换热器是满的,所有的管子都被液体包围着。

3.

【答案】

(1)T; (2)T; (3)F; (4)F

【解析】

(1)正确。传热学是研究热量传递规律的一门基础学科. 它涉及导热、对流和辐射三种基本传热方式, 旨在通过理论和实验方法来解释和预测热能在不同介质中的传递过程.

(2)正确。热传递确实可以通过这三种方式单独或组合进行。

(3)错误, 说法错误。在强制对流中, 运动的主要原因是外力作用, 如风扇、水泵等, 而不是密度和温差引起的。自然对流才是由密度差异和温差引起的, 例如暖气片附近的热空气上升。

(4)错误, 说法太片面。传导并不是液体和气体传热的唯一方法。虽然传导在液体和气体中确实发生, 但这两种物态的传热方式还包括对流。在液体和气体中, 热量可以通过分子间的碰撞(传导机制的一部分)以及流体的宏观运动(对流)来传递。例如, 水中的热量通过对流可以快速传递, 同时气体中的热量传递也涉及复杂的对流现象。

模块三 单元二

2.1 Aerodynamics basics

2.翻译

- (1)在一定范围内,升力可以通过增加迎角、机翼面积、自由流速度或空气密度,或改变翼型的形状来增加。
- (2)飞行员必须控制飞机允许携带的总重量(乘客、燃料和货物)的数量和位置。重量的分布(即飞机重心的控制)在空气动力学上和承载的重量一样重要。
- (3)推力是通过使周围空气加速到比飞机速度还快的速度而获得的。
- (4)往复式或涡轮螺旋桨飞机的推力来自螺旋桨转动所产生的推进力,剩余推力由排气提供。
- (5)在喷气发动机中,推力来自涡轮压缩空气的旋转叶片的推进力,然后通过引入的燃料燃烧而膨胀,并从发动机中排出。
- (6)飞机的临界马赫数被定义为在某一点上。

3.回答问题

- (1) During straight and level, unaccelerated flight, the forces acting on an airplane are lift, weight (gravity), thrust, and drag.
- (2) An airfoil generates lift by accelerating air over its curved upper surface, reducing pressure above it compared to the relatively higher pressure below. This difference in pressure creates an upward force known as lift.
- (3) Thrust is produced by the engine or propulsion system of the airplane. For a jet engine, it's created by the expulsion of high-velocity gases from the engine. For a propeller-driven aircraft, thrust is generated by the propeller blades converting rotational power into forward motion.
- (4) Parasitic drag can be reduced by streamlining the aircraft's shape, using smooth surfaces, reducing protrusions, keeping the aircraft clean, and ensuring proper maintenance to maintain optimal airflow around the aircraft.
- (5) The Mach number is a dimensionless quantity that represents the ratio of the speed of an object to the speed of sound in the surrounding medium. The critical Mach number is the point at which the airflow over some parts of the aircraft reaches Mach 1, indicating the onset of local supersonic flow, typically around Mach 0.7 to 0.8 for many general aviation aircraft.
- (6) When an aircraft exceeds the critical Mach number, it enters a transonic flight regime where the airflow over parts of the aircraft becomes supersonic, leading to a significant increase in wave drag and potential loss of control due to shockwaves and changes in airflow behavior. This can result in Mach tuck or a loss of lift and increased buffeting if not properly controlled with a design consideration called "Mach trim."

4.填空

- (1) An aircraft in straight-and-level un-accelerated flight has four forces acting on it, they are lift ;an upward-acting force ; drag, a retarding force; weight, the downward effect that gravity has on the aircraft ;and thrust, the forward-acting force provided by the propulsion system .
- (2) drag - Acting in continual opposition to thrust is drag, which has two elements: parasite drag and induced drag.
- (3) Parasite drag is normally divided into three types: form drag , interference drag , skin friction drag .

2.2 Airframe Construction

2.翻译

- (1) 飞机部件由称为结构件的各种部件(即弦、纵梁、肋、舱壁等)组成。
- (2) 机身是飞机的主要结构或主体。它为货物、控制装置、附件、乘客和其他设备提供空间。
- (3) 在单引擎飞机上,它也有动力装置。在多引擎飞机中,发动机可以安装在机身上,也可以安装在机身上,或者悬挂在机翼结构上。

3.填空

(1) The airframe of a fixed-wing aircraft is generally considered to consist of five principal units: fuselage, wings, empennage, landing gear and power plant. Helicopter airframes consist of the fuselage, main rotor system, tail rotor system (on helicopters with a single main rotor), and landing gear.

(2) The airframe components are constructed from a wide variety of materials and are joined by riveting, bolting, welding, or bonding.

(3) The typical design of fuselage may be divided into three classes: (1) tube and beam, (2) semimonocoque, or (3) semimonocoque.

(4) The leading section of the horizontal surface is known as the elevator, and the rear movable section is known as the stabilizer. The stationary section of the vertical surface is called the rudder, and the movable section, the vertical stabilizer.

2.3 Basic Knowledge of Ground Handling and Servicing

2.翻译

- (1) 如果飞机滑出起重机或从千斤顶上掉下来,修理飞机的费用通常是相当高的。
- (2) 从起落架支杆顶起时,通常建议两个轮子不要同时离地。
- (3) 飞机和直升机是为飞行而设计的,在地面上移动往往是一个相当尴尬的过程。
- (4) 从驾驶舱来看,很难保证飞机结构与任何建筑物或其他飞机之间有足够的间隙。因此,将信号员安置在他们可以观察机翼或旋翼和任何障碍物的地方是一个好主意。
- (4) 如果螺帽、螺栓、保险线等异物被拉进涡轮发动机的进气道,或者通过旋转的螺旋桨叶片的弧线,很容易造成损坏,从而导致灾难性的故障。
- (5) 太多的事故发生在给轮胎充气或放气的时候。始终使用经过校准的轮胎量规,并确保使用处于良好工作状态的调节器。

3.填空题

(1) Fill in the following table according to Table 1-1.

Color and type of signal	Meaning on the ground
Steady green	CLEARED FOR TAKEOFF
Flashing green	CLEANED TO TAXI
Steady red	STOP
Flashing red	TAXI CLEAR OF LANDING AREA (RUNWAY) IN USE
Flashing white	RETURN TO STARTING POINT ON AIRPORT
Alternating red and green	EXERCISE EXTREME CAUTION

(2) Turbojet aircraft are dangerous from both the front and the rear. According to Figure 3-9, 50 feet is minimum safety distance from the front, 150 feet and 600 feet minimum distance for idle power and take off power from the rear.

模块三 单元三

3.1 fundamentals of quantitative log interpretation

2.翻译

(1)含水带只存在两种液体:滤液和地层水。相对新鲜的泥浆,滤液密度较小,并将向上移动到可渗透层的边界。

(2)在河床下部有入侵带消失的极端情况。

3.填空题

(1) When oil is present (as) the movable liquid, two general patterns are possible.

(2) The quantity of filtrate (in) the system is effectively fixed.

(3) The resistivity parameter of greatest interest is R_t , because it is related (to) the hydrocarbon saturation.

(4) The influence of R_{xo} (on) the R , measurement and vice versa.

(5) R_w may be found (from) the SP curve, water catalogs, or other sources.

(6) Porosity values can be obtained (from) a Sonic Log, a Formation Density Log.

(7) In addition (to) porosity, these logs are affected (by) other parameters, such as lithology, nature of the pore fluids, and shaliness.

(8) For common formation materials the electron density is proportional (to) actual density.

3.2 Drilling platform and drill pipe lifting equipment

2.翻译

(1)第三部分(图 1-2)-比前两个部分小。它由两部分组成:第一部分是垂直的,第二部分是沿着逐渐增加滚筒(辊身)倾角的曲线绘制的。

(2)当需要保持井筒进入地层的预定角度时,可按此剖面进行钻井。

3.填空题

(1) Directional drilling is currently widely used (in) oil, natural gas, and solid mineral drilling

(2) The rotor represents the intermittent process (of) continuous cutting (lateral) to bend the wellbore

(3) The fourth part 4- is made (up) of the falling curvature curve

(4) This profile is different (from) previous profiles in that a curve segment 4 is added to vertical profile 1, profile 2

(5) The above profile is a curve located (on) the same vertical plane.

(6) The Y mark on the paper tape is merged (with) the Y mark on the YBT coupling.

模块四 单元一

1.1 Slush Supply Pump

2.翻译

(1)该型号泵为立式单级离心泵,由机匣、叶片、轴、泵盖、轴封体、连接管道、支架、马达组成;等。

(2)机匣、泵盖、轴承体与管路、支承组成导流件和支承件,叶片和轴组成转子件,由上下轴承支承在支承件上。

3.填空题

(1) When the pump is working,the motor revolves pump shaft (through) shaft coupling.

(2) The trouble caused (by) renewing and maintaining shaft seal is avoided and shutdown time for repairing is reduced.

1.2 Centrifuge

2.翻译

(1)输送机由塔筒体、滚筒体、封口、导轨接头、螺旋叶片焊接组件、法兰轴、花键、花键轴组成。螺旋叶片均匀焊接在鼓体上。叶片采用硬质合金镶嵌,提高了叶片的耐磨性,延长了使用寿命。

(2)玉米筒(LW400-NY-G22,LW500-NY26)上有 26 个孔(F50mm)。在孔的圆周上喷涂耐磨合金。花键夹套与柱筒段上的花键连接。

3.填空题

(1) It consists (of) two stage epicyclic gear.

(2) One safe bolt is placed (on) the input shaft end.

(3) Interlocking unit is adopted (to) control both main and aux.motors.

(4) The well drilling liquid to be processed is sent(to) the input pipe of the drum small end.

(5) Slush supplying pump supplies slush (for) the centrifuge.

模块四 单元二

2.1 Monitor

2.翻译

(1)医疗器械的用途是用于诊断、手术、治疗、实验室检测、监测、实验设备、人体器官功能替代等。

(2)这些功能大多是针对医疗机构和医学教学科研机构的，所以它们的用户也是这些机构的主体。

3.填空题

(1) Due (to) the high technological content in the manufacturing of medical instruments and equipment.

(2) (in) particular, the understanding and accuracy of the instructions, labels, and packaging labels of medical device products are not accurate.

(3) The main problems are that there is no record (of) purchasing medical devices and the legal certification and qualification of the supplier cannot be provided.

(4) Interpretation of resting 12-lead ECG and C.O. monitoring are restricted (to) adult patients only.

2.2 Defibrillator

2.翻译

(1)仅用于心室颤动和扑动。此时，患者已失去意识，应立即进行除颤。除颤后，通过心电图仪观察患者心律是否转为窦性心律。

(2)可多次间歇除颤，能量从低到高不等。

3.填空题

(1) If the patient experiences ventricular fibrillation or flutter, electric defibrillation should be performed as early (as) possible.

(2) After completing the electrocardiogram recording, remove the lead wire (from) the electrocardiograph.

(3) After the operation is completed, reset the energy switch (to) zero, position the patient.

模块四 单元三

3.1 Tunnel construction equipment

2.翻译

(1) 钻杆是连接钻机和钻头的核心部件，在钻井过程中负责传递动力和承载载荷。

(2) 钻头是设备的工作部分，通过旋转冲击煤层实现空化、卸压和增强反射的目的。

3.填空题

(1) (through) variable diameter drilling technology, coal seam caving, pressure relief and reflection enhancement can be realized, and coal seam mining efficiency and safety can be improved.

(2) The integrated equipment of coal seam caving, pressure relief and permeability improvement (in) variable diameter drilling is mainly composed (of) drill, drill rod, drill bit and control system.

3.2 Vehicle radiator

2.翻译

(1) 真空钎焊散热器采用真空钎焊技术制成，具有焊接强度高、密封性好等优点。

(2) 其结构和工作原理与装配式散热器相似，主要应用场景也是汽车、摩托车等车辆的发动机冷却系统。

3.填空题

(1) the main application scenario is also the engine cooling system of vehicles such (as) automobiles and motorcycles.

(2) The water tank is used (to) store the coolant.