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.....试卷装订线.....
 装订线内不要答题，不要填写考生信息.....
试卷装订线.....

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武汉理工大学考试试卷 (A 卷)

2018~2019 学年第一学期 先进制造技术概论 课程 时间 120 分钟, 32 学时,

2 学分, 闭卷, 总分 100 分, 占总评成绩 70% 2019 年 1 月 6 日

题号	一	二	三	四	五	六	七	八	九	十	合计
满分	10	10	80								100
得分	6	5	59								70

得分 6

1 Fill in the Blank Question (0.5 mark for every blank, 10 marks)

- A manufacturing system is a physical organizational system of components for the purpose of achieving a predetermined manufacturing purpose. It is an organic whole with specific functions, which consists of manufacturing process software, hardware and related personnel. 0.5 0.5
- According to the viewpoint of material forming theory, the forming method of mechanical parts can be divided into three types such as materials forced forming, removal forming and stack forming. 0.5 0.5
- In order to adapt to different cutting loads, high speed cutting and high cutting accuracy, the machine bed should have: constant temperature, constant humidity, purification and vibration isolation. 0.5
- The three stages of mechanical manufacturing process are blank preparation, machine forming and surface modification. 0.5 0.5
- The flexible manufacturing system (FMS) mainly includes people in the enterprise, technology and management. 0.5
- The composition structure of Manufacturing Resource Planning (MRPII) can be divided into three major systems, which are plan control, technology management and financial management. 0.5

得分

2. Identification Question (名词解释) (2 marks for every item, 10 marks)

1) Manufacturing (General):

Logistic-related ~~material~~ production processing and assembly process.

2) Value Engineering:

A technology to value the management and process production. It focus on the management part. With the tool of technology, it can find the best combine between cost and value, and then find the best value of the production. 1.5

3) Green product:

Its life cycle is environmentally friendly, human health, save energy and resource, and do no harm or less harm to environment and ~~have~~ it's not harmful for the producers and the users. 1.5

4) Flexible manufacturing system:

A manufacturing system which can turn the less-variety and mass ~~product~~ product system to the multiple-variable flexible system. 1

5) Concurrent Engineering (并行工程):

An engineering that can minimize the work and labor to increase efficiency. It can improve the manufacturing process and assembly process. 1

得分

3. Short Answer question, 8(

1) Please describe the national economic

Ma

com

power

labor

It's also

2) Please describe

Technology

(1)

(2)

(3)

Key

3) What

得分 65

3. Short Answer and Analysis Question (Choose any 5 questions, 16 marks for every question, 80 marks)

1) Please describe and discuss the position and function of manufacturing industry in national economy.

Manufacturing is the pillar of national economy and comprehensive national power. It's the power. recourse. of national economy. It provides labor employment and enhance the export expansion. It's also the guarantee of the national security.

2) Please describe the main content and characteristic of Computer-Aided Design (CAD) Technology and analyze the key technology of CAD.

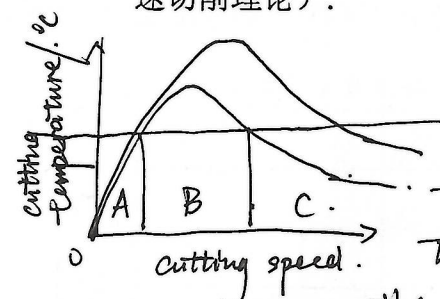
- 1) build digital model, assembly picture
- 2) surface rendering and dynamic simulation.
- 3) engineering analysis.

Key technology. 1) build 3D model.
2) surface analysis.
3) dynamic simulation.

3) What are the main developments of advanced manufacturing technology?

- 1) practical. it can be used in daily produce not just theory
- 2) extensive. it can be used in many kinds of manufacturing industries.
- 3) systematic. it has the completed system, from step to step.
- 4) integrated. it collect kinds of different technology.
- 5) dynamic. it can be changed to adjust different situations and conditions.

4) Combined with the Salomon curve, please describe the high speed cutting theory (高速切削理论).



In the normal cutting speed region. (A area). The cutting temperature increased with the raise of cutting speed. But the temperature will decrease after a certain value. The area B called "dead valley". When the cutting speed beyond the 'dead valley' we can reach the high cutting speed with low cutting temperature by the normal manufacturing tools.

5) Please briefly describe the relationship and difference between MRPII and ERP.

MRPII focus on the internal resource of the enterprise, but it has its limit. The ERP is improved and enhanced from MRPII. It integrated the consumer's requirements and the internal resource from enterprise and external resource from the suppliers together. to make the process chain as the core.

6) Indicate one new technology of additive manufacturing (3D printing) and its application prospect.

Fused Deposition Manufacturing.

the wire material is heated to half melt at the nozzle and be pressed to the work-plate. With the nozzle move, the half-melt material form the first layer. Then the work-plate goes down and accumulate the second layer. until finish.

Because of the cheap cost it can be used on shoes. clothes. even machine area and aerospace field.