

Exam submission & Questions

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MEC-E7006 - Advanced Manufacturing D, 02.03.2021-12.04.2021

Exam 14.4.2021

1) Which [AM processes](#) use laser in the process? Use process group names from the standard terminology and a example of a process (example trade name). If they are using a laser, what is the purpose of the laser – how does it interact with the material and in which form that material is?

Criteria:

2 points: process-based yes/no and the correct terminology. Mention also groups and processes that does not use laser.

4 points: process-based interaction with the material

Table below might help to answer for the question:

From all process groups			If laser	
Process group	Laser yes/no	Example of process (trade name)	Interaction with the material	Form of material

2) You have planned to create a startup for 3D printing spare parts. Define what kind of spare parts you are planning to manufacture. Select a suitable AM process (one) and suitable material (one).

Who would be your competitors in the market (What kind of companies)? What would be your selling points – what makes you different from the current offerings (based on your knowledge)?

In which direction (applications, AM technologies, materials) would you widen in the future? Justify the synergies that the previous selections would have?

Criteria:

1 point: Definition of what kind of spare parts you are planning to make

1 point: Selection of process and justification why that one, especially for spare parts

1 point: Who would be your competitor on the market

2 points: Selling points

1 point: future

3) How can additive manufacturing be used in the medical field? Why is AM good for medical applications? Why is it not more widely used? What kind of equipment (not only 3D printers) is needed for the whole process of making parts for medicine?

Criteria:

2 points – How it can be used

1 point – why it is good

1 point- why it is not widely used

2 points – needed equipment