

Answers Exam AE3211-II
August 12, 2015

Multiple choice questions

- 1 C
- 2 A
- 3 C
- 4 B
- 5 D
- 6 D
- 7 C
- 8 B
- 9 C
- 10 B
- 11 A
- 12 C
- 13 B
- 14 B
- 15 D

MC	45 points
Open Q	52 points
Total	97 points

Grade: X/9.7
(rounded off at 0.5)

Open questions

- 16 a "Universal" = useable for different products/shapes; opposite = product related
- 16 b No, you always need one rigid tool to transfer the shape/geometry onto the material
- 16 c Costs of two tools, matching and alignment
- 16 d Higher tooling costs usually requires higher product series (depreciation)

- 17 a smaller, because the spring back tends to "undo" part of the deformation
- 17 b larger, for the same reason as in question a
- 17 c Yes, the ratio of product angle/bend angle is almost equal to the ratio of the bend radius/product radius (note the reversal of "product" and "bend"); $r_1\alpha_1 \approx r_2\alpha_2$

- 18 a Learning curve: decrease of required time for a particular work package with increasing aircraft number
Delivery interval: time between the completion of two subsequent aircraft
- 18 b Reduction of delivery interval or increase of production; more shifts (of labour/workers) allow for more aircraft to be produced in the same time
- 18 c Larger work packages (diversity), less repetition, more responsibility
- 18 d same work is performed in the same time with the same crew

- 19 a Both can be correct; depending on the argument delivered:
False – because less damages expected (less fatigue, corrosion)
True – more inspection required because of hidden damages
- 19 b Delamination, porosity, matrix cracking (due to UV e.g.), fibre failure, matrix softening, etc.