MA266 NURBS quiz study guide 5% of course grade

10 write-in questions and ten true and false will be chosen from this list.

1. What does NURBS stand for?
    a. Non Uniform Rational B-Splines
2. NURBS surfaces are defined by
    a. Curves
3. Curves and Surfaces have how many display levels?
    a. Three
4. What two basic methods are used to create NURBS models?
    a. Use of primitives
    b. Use of curves to create surfaces
5. List the components in a curve.
    a. Control Vertex
    b. Edit Point
    c. Curve Point
    d. Hull
6. An open CV and U indicate what on a curve?
    a. The start of the curve direction
7. A "Span" is the distance between two of these 'curve components'.
    a. Edit Points
8. What is the minimum number of CVs required to make a cubic curve?
    a. Four
9. List the three states the 'form' of a curve or surface can take.
    a. Open
    b. Closed
    c. Periodic
10. List the surface components
    a. Control Vertex
    b. Isoparm
    c. Hull
    d. Surface Point
    e. Surface Patch
    f. Surface UV
11. Use of the Trim tool or Booleans will produce a secondary component called a….
    a. Trim Edge
12. What must you remember to do in the options before attaching curves or attaching surfaces?
    a. Uncheck "Keep Originals"
13. If you attach a linear surface and a cubic surface, what degree will the new surface have?
    a. Cubic
14. What Surface creation tool will sweep a "profile" curve 360^0 on its center pivot?
    a. Revolve

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15. What Surface creation tool will sweep a “profile” curve along a “path” curve?
    a. Extrude. Style set to ‘Tube’
16. What Surface creation tool will sweep a single profile curve a specified distance along the curve’s Profile Normal or along a chosen axis?
    a. Extrude. Style set to ‘Distance’
17. What Surface creation tool will create a surface between two or more “profile curves”?
    a. loft
18. What Surface creation tool will create a surface between two “rail” curves and three or more “profile” curves?
    a. Birail 3+
19. The rendered detail and smoothness of a NURBS surface can be improved by increasing the quality and value of this attribute.
    a. Tessellation
20. What function would you use to convert an Isoparm into a curve?
    a. Duplicate Surface curve
21. For Bevel Plus to work with multiple curves, all the curves must be what?
    a. Planar
22. What is the most effective way to increase the number of CVs/Hulls at a specific place on a surface?
    a. Use Insert Isoparm
23. What is the most effective tool you can use to add CVs to a specific location on a curve.
    a. Insert Knot
24. What is the most effective way to increase the number of CVs/Hulls across the whole surface?
    a. Rebuild Surface
25. List three methods of closing the top of an open surface.
    a. Pinch
    b. Loft and Attach
    c. Planar
26. List the two styles for both Attach curve and Attach Surface.
    a. Connect
    b. Blend
27. When using Attach curve/surface, set to blend, what option can be checked to create a rounded corner?
    a. Blend Knot Insertion
28. A profile curve can be added onto a surface by using what function?
    a. Project curve onto surface
29. The Surface’s Freeform Fillet tool will create a fillet between two of these selected components.
    a. Isoparms

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1. **T** F The default setting for **Bevel Plus** will produce a polygon mesh.

2. **T** F NURBS surfaces are rendered as polygons.
   (*Tessellation value determines poly-count. Increase Tessellation for quality render)*

3. T **F** A Surface Fillet will blend two surfaces into one.
   (*The Fillet is like a skirt, giving the appearance of a single shape)*

4. **T** F A polygon plane can be extruded along a curve.

5. **T** F Polygon edges can be converted into curves.

6. **T** F Any surface creation tool can be set to generate a polygon mesh.

7. T **F** The **display level** of 1 displays a curve or surface as it will appear in a render.
   (*What are the display levels for NURBS?*)

8. T **F** Surfaces and curves are best created and modified through the **Edit Points**.
   (What order do curves loft?)

9. **T** F A **cubic curve** can be used to create a linear revolve.

10. T **F** **Loft** creates a surface across a series of curves in the order they were created.
    (*What order are curves lofted*?*)*

11. T **F** A **Trim Edge** cannot be converted to a curve. (*Use duplicate surface curve*)

12. **T** F An isoparm can be treated just like a curve.
    (I*soparms can be turned into curves, lofted, extruded…etc)*

13. **T** F All surfaces have a **seam**. (*How does this affect a projected curve or fillet*?)
    (*Seams can be moved by going to: Surfaces>Move Seam)*

14. T **F** **A trim** actually creates a hole in the surface. (*What does it create*?)

15. T **F** The **Add Points Tool** will only add points to the start of a curve.

16. T **F** A curve can be detached at any CV. (*What components can be selected to "detach*?)

17. **T** F A surface can be **detached** at any **an Isoparm**.

18. **T** F Unlike polygons, it's permissible for surfaces to have CVs occupying the same space.
    (*Can two surfaces overlap?)*