CS602-COMPUTER GRAPHICS

NOTE: UPDATE BOOK

SOLVED MCQS FROM FINAL TERMS PAPERS

SOLVED BY JUNAID MALIK AND TEAM



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ALL answers are verified if found any mistake then Correct ACCORDINGLY

1. Computer graphics and computer vision are _____ disciplines.
   - Related
   - Interrelated
   - Same
   - Different

Ref : Computer vision is, in some ways, the inverse of computer graphics. While computer graphics
produces image data from 3D models, computer vision often produces 3D models from image data.
http://en.wikipedia.org/wiki/Computer_vision

2. OpenGL has become the industry's most widely used and supported _____ graphics application
programming interface (API), bringing thousands of applications to a wide variety of computer
   - platforms.
   - Dimensional
   - Dimensional
   - 2 Dimensional and 3-Dimensional

Ref: http://www.opengl.org/about/

3. _____ sets the reshape callback for the *current window*.
   - glutIdle function
   - glutKeyboardFunc
   - glutReshapeFunc
   - glutDisplayFunc

Ref:
https://developer.apple.com/library/mac/documentation/Darwin/Reference/ManPages/man3/glu
tReshapeFunc.3.html

4. _____sets the global idle callback to be ‘func’ so a GLUT program can perform background
processing tasks or continuous animation when window system events are not being received.
   - glutIdle function

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- glutKeyboardFunc
- glutReshapeFunc
- glutDisplayFunc

Ref: http://www.cs.uccs.edu/~ssemwal/man.html

5. X2/a2 – y2/b2 =1 is an equation of

- Hyperbola Page no : 70
- Parabola
- None of given
- Ellipse

6. To modify the object shape, shearing transformation cannot be used.

- False Page no : 124
- True

7. Rotation is performed around a fixed point called _____.

- Pivot
- Point
- rotation Page no : 114

8. Computer graphics is very helpful in producing graphical representations for scientific visualization and analysis

- True
- False

9. Save a line with both endpoints inside all clipping boundaries.

- Trivial Reject
- Trivial Accept Page no : 137
- None of given

10.Dark lights are nothing more than lights in which one or more of the color values are _____. Unknown

- Negative Page no : 230
- Positive Zero

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11.A series of _____ computer operations convert an object's three-dimensional coordinates to pixel positions on the screen. Transformations, which are represented by matrix multiplication, include modeling, viewing, and projection operations. Such operations include rotation, translation, scaling, reflecting, orthographic projection, and perspective projection.

- Three Page no : 366
- Two
- Four
- Ten

12. At a physical surface, our eye's perception of the color depends on the distribution of photon energies that arrive and trigger our _____ cells.

- Eye Retina
- Cone Page no : 393

12.This projection technique has the direction of projection perpendicular to the viewing plane, but the viewing direction is NOT perpendicular to one of the principle faces.

Orthographic Parallel Projection

- Axonometric Parallel Projection Page no : 189
- Oblique Parallel Projection

13.The Phong reflection model simplifies light-matter interactions into (essentially) 4 vectors and a number of constants. Which piece of the Phong model is responsible for giving spheres their bright white spots?

- Specular Page no : 234
- Ambient
- Diffuse

14.In the Phong Reflection model, _____ light is the same everywhere.

- Ambient
- Diffuse
- Specular

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- Emissive

Ref: www.cs.unc.edu/~jwendt/classes/COMP136/quizzes/quiz3Answers.doc

15.A plane is two dimensional since in order to uniquely define any point on its surface we require _____ numbers.

- Two
- Three
- Four
- Five

16.In perspective projection, for your view to come out correctly, you will also want the _____ to pass through the middle of the screen.

- X axis
- Y axis
- Z axis Page no : 195
- None

17.Neither floating-point nor signed integer values are clamped to the range _____ before updating the current color.

- 0 , -1.0
- -1 , 1
- 1 , -1

0, 1 Page no : 316

18.Bezier curve is the ideal standard for representing the _____ piecewise polynomial curves. Most complex

- Less complex
- None of given
- More complex Page no : 333

19.An object's _____ determine its orientation relative to the light sources. For each vertex, OpenGL uses the assigned normal to determine how much light that particular vertex receives from each light source.

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- Unit
- Normal Page no : 395
- None of given

21.Which of the following affine transforms does NOT affect vectors?

- Scale
- Rotation
- Shear
- Translation Page no : 113

22) This projection technique does NOT have the direction of projection perpendicular to the viewing plane.

- Orthographic Parallel Projection
- Axonometric Parallel Projection
- Oblique Parallel Projection Page no : 189

23) This projection technique has the direction of projection perpendicular to the viewing plane, and the viewing direction is perpendicular to one of the principle faces.

- Orthographic Parallel Projection Page no : 189
- Axonometric Parallel Projection
- Oblique Parallel Projection

24) In OpenGL, there are several different matrices. We have discussed two of them in class. Which one of the below would be used in conjunction with a glRotatef function call?

- GL_MODELVIEW Page no : 388
- GL_PROJECTION

25) In OpenGL, there are several different matrices. We have discussed two of them in class. Which one of the below would be used in conjunction with glFrustum?

- GL_MODELVIEW

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- GL_PROJECTION Page no : 369

26) Which of the following is the order that geometry operations are performed in OpenGL (where we read the order from left to right)?

- GL_PROJECTION GL_MODELVIEW Perspective division
- GL_MODELVIEW GL_PROJECTION Perspective division
- Perspective division GL_PROJECTION GL_MODELVIEW
- GL_MODELVIEW Perspective division GL_PROJECTION
- GL_PROJECTION Perspective division GL_MODELVIEW

27) The Phong reflection model simplifies light-matter interactions into (essentially) 4 vectors and a number of constants. Each piece of the Phong model uses different vectors and constants. Which portion does NOT include taking a dot product?

- Ambient Page no : 234
- Diffuse
- Specular

28)Which of the following is NOT a modern application for Computer Graphics---
---

- ► Stop-motion animation Page no : 6
- ► Computer Aided Geometric Design
- ► Video Games
- ► Scientific Visualization

29)Both Boundary Filling and Flood filling algorithms are non-recursive techniques,

- False Page no : 97
- True

30) TV series are made as simply as possible from the animation point of view. This approach is generally known as ----------.

- Full animation

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- Limited animation Page no : 423
- Low animation
- High resolution

31) An eight frame run cycle that ---------- frame/frames to each step gives a fast and vigorous dash. At this speed the successive leg positions are quite widely separated and may need dry brush or speed lines to make the movement flow.

- ► Two
- ► One
- ► Three
- ► Four Page no :432

32) ---------- Reflection is the effect of reflecting light toward the direction from which it came, no matter the orientation of the surface.

- ► Forward scattering
- ► Diffuse Lambertian
- ► Backscattering
- ► Retro Page no : 288

33)What makes this really challenging to model is that the index of refraction for most materials is a function of the---------- of the light. This means that not only is there a shift in the angle of refraction, but that the shift is different for differing ----------of light.

- ► Reflecting angle, Reflecting angle
- ► Refracting angle, Refracting angle
- ► Frequency, Frequency
- ► Wavelength, Wavelength Page no : 293

34) The reflected light wave turns out to be a ----------case since light is reflected at the same angle as the incident wave (when the surface is smooth and uniform, as we'll assume for now).

- ► Abnormal
- ► Complex

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- ► Simple Page no : 291
- ► Unknown

35)Tessellation can be adaptive to the _____ degree of curvature of a surface.

- ► Local Page no : 165
- ► Static
- ► Global
- ► Variable

36) _____ sets the reshape call back for the *current window*. The reshape callback is triggered when a window is reshaped.

- ► glutMainLoop
- ► glutIdleFunc
- ► glutReshapeFunc Page no : 307
- ► glutDisplayFunc

37) Signed integer colour components, when specified, are linearly mapped to floating-point values such that the most positive represent able value maps to 1.0, and the most negative represent able value maps to ----------. Floating-point values are mapped directly.

- ► -1.0
- ► 0.0
- ► 2.0
- ► 1.0 Page no : 315

38) NURBS stands for----------

- ► Non Universal Rational Binary Spline
- ► Non Uniform Rational Binary Splines
- ► Non Uniform Rational Beta Splines Page no :320
- ► Non Universal Rational Beta Splines

39)An orthogonal set of vectors----------

- ► Must be a set of linearly independent vectors

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- ► Must be a set of linearly dependent vectors
- ► Must be made up of the basis vectors (e1, e2, and e3
- ► Can be made up of any set of vectors

40) Bezier curve is numerically the ---------- of all the polynomial-based curves used in these applications.

- ► None of the given
- ► Most stable
- ► Less stable
- ► Most unstable

Ref : http://books.google.com.pk/books?id=YmQy799flPkC&pg=PA264&lpg=PA264&dq=Bezier+cur ve+is+numerically+the+----------+of+all+the+polynomial-based+curves+used+in+these+applications.&source=bl&ots=MHnr87FLlQ&sig=wG0oXJ00vxWtEY7RnfNnOXJrc08&hl=en&sa=X&ei=nTroUaDdL6eB4ASioIHgBA&ved=0CCoQ6AEwAA#v=onepa ge&q=Bezier%20curve%20is%20numerically%20the%20----------

40. Bezier curve is the ideal standard for representing the ---------- piecewise polynomial curves.

- ► None of the given
- ► Non complex
- ► Most complex
- ► More complex repeated Question No: 15

41) Keep polygon orientations consistent to make sure that when viewed from the outside, all the polygons on the surface are oriented in the ____ direction.

- ► None of the given
- ► Neither
- ► Different
- ► Same Page no : 340

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42)The ---------- is most simple example that exhibits the property self-similarity.

- ► Mosse
- ► Fern Page no : 350
- ► None of the given
- ► Thohar

43) A common mistake people make when creating three-dimensional graphics is to start thinking too soon that the final image appears on a flat, two-dimensional screen. Avoid thinking about which pixels need to be drawn, and instead try to visualize ---------- space.

- ► Multi-dimensional
- ► One-dimensional
- ► Two-dimensional
- ► Three-dimensional Page no: 366

44)Which of the following properties of rational Bezier curves fails if the weight assigned to a control point is negative?

- ► End-point interpolation
- ► Variation Diminishing
- ► Symmetry
- ► Convex-Hull page no : 335

45)In the Phong reflection model, there are 3 constants (a, b, c) which are used to describe the qualities of which of the following phenomena?

- ► The attenuation of a point light source with distance Page no : 285
- ► The size (in each dimension) which the light is assumed to have
- ► The amount to perturb reflection vectors as they are mirrored across the normal
- ► The material reaction to ambient, diffuse and specular light (respectively)

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46)The Phong reflection model simplifies light-matter interactions into (essentially) 4 vectors and a number of constants. Which piece of the Phong model is responsible for giving spheres their bright white spots?

- ► Specular repeated
- ► Diffuse
- ► Ambient

48)When you hit a surface in ray tracing, generally shadow rays are tested against all objects in a scene. If these rays come back saying they hit an object in the scene, which of the following do you do?

- ► add all components (i.e. ambient, diffuse and specular) from that light source to the object.
- ► add all EXCEPT the ambient light from that light source to the object (i.e. diffuse and specular)
- ► add only the ambient light from that light source to the object
- ► add none of the light from that light source to the object

49)The Color Space tool is a handy tool that we can use to interactively add two colours together to see the effects of the various strategies for handling oversaturated colours.

- ► False
- ► True page no : 230

50)A polygon is usually defined by a sequence of ---------- and Edges.

- ► Ending lines
- ► Points
- ► Vertices Page no : 243
- ► Edges

51)Which of the following properties of Bezier curves guarantees that a line passes through the control polygon as many times or more times than the line passes through the Bezier curve itself? ► End-point interpolation

► Variation Diminishing

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► Symmetry

► Convex-Hull

Ref: http://cagd.cs.byu.edu/~557/text/ch2.pdf

52)Parity is a concept used to determine which _____ lie within a polygon. (Choose best suitable answer)

► Edge

► Vertices

► Pixels Page no : 80

► None of the given

53)The actual filling process in boundary filling algorithm begins when a point _____ of the figure is selected.

► Outside the boundary

► Inside the boundary

► At boundary

► None of the given

Ref: http://groups.csail.mit.edu/graphics/classes/6.837/F98/Lecture8/Slide05.htm

54)Weiler-Atherton Polygon Clipping technique modify the vertex-processing procedures for window
boundaries so that _____ polygons are displayed correctly.

- ► Convex
- ► Concave Page no : 245
- ► Complex
- ► None of the given

55)If a line connecting any two points within a polygon does not intersect any edge, then it will be a _____ polygon.

- ► Convex Page no : 78
- ► Concave
- ► Complex

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- ► None of the given

56)_____ can be defined as a mapping of point P(x, y, z) onto its image P`(x`, y`, z`) in the view plane which constitutes the display surface.

- ► Mapping plane
- ► Three Coordinate Planes
- ► View plane Repeated
- ► Projection

57)The reflected light wave turns out to be a / an _____ case since light is reflected at the same angle as the incident wave (when the surface is smooth and uniform, as we'll assume for now).

- ► Unknown
- ► Simple Page no: 291
- ► Complex
- ► Abnormal

58)Which of the following is NOT true about quaternions?

- They are made up of 4 numbers
- They should always be normalized to length 1
- They can be used to represent all affine transforms
- They can be used to define the rotation of an object

1) In class, we discussed three forms of shading for “Utah” graphics. Which was the first to use per vertex normals?

- Flat Shading
- Phong Shading
- Gouraud Shading Page no : 240

59) Given any implicit equation, which of the following is true for all (x, y, z) that make the equation exactly zero?

- All those points are inside the object defined by the implicit equation
- All those points are on the surface of the object defined by the implicit equation Page no :205
- All those points are outside the object defined by the implicit equation
- You can’t know anything without knowing what the implicit equation is

60) When solving ray-sphere intersections using the implicit equation for a sphere, you must solve the quadratic equation. Which of the following do you know if the B2-4AC (i.e. the part under the square root) is negative?

- The ray intersects the sphere at a negative t… discard this result

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- The ray intersects the sphere at a positive t… continue to the solution
- The ray does not intersect the sphere… discard this result Page no : 265
- The ray begins inside the sphere… this is a special case

61) _____ sets the global idle call back to be 'func' so a GLUT program can perform background processing tasks or continuous animation when window system events are not being received.

- glutIdleFunc
- glutMainLoop
- glutDisplayFunc
- glutReshapeFunc

Ref: http://www.opengl.org/resources/libraries/glut/spec3/node63.html

62) A space curve can be confined to a plane.

- True
- False Page no : 326

63) A tangent vector certainly defines the slope at one end of the curve, but a vector has characteristics of.....

- direction
- magnitude
- both direction and magnitude Page no : 331
- None of the given

64)
We allow the parametric variable to take on values only in the interval ----------.

- -1 <= u <= 0
- 0 <= u <= 2
- 0 <= u <= 1 Page no : 321
- -1 <= u <= 1

65) The degree of a Bezier curve is equal to n-1, where n is the number of control points

- Yes Page no : 334
- No

66) Bernstein polynomial functions are the basic functions of _____ curves.

- NURBS
- Bezier Page no : 337
- Both NURBS and Bezier
- None of the given

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67)
A parametric curve is one whose defining equations are given in terms of a ----------, common, independent variable called the parametric variable.

- Triple
- Double
- Single Page no : 320
- None of the given

68)
Bit mask to select a window with multisampling support. If multisampling is not available, a ---------- window will automatically be chosen.

- Non-multisampling Page no : 305
- Multisampling
- Mono-multisampling
- Di-multisampling

69)
Bezier curve is tangent to the lines connecting _____.

- First two points
- Last two points
- Fist two points and last two point
- None of the given

70) OpenGL is well structured with an intuitive design and logical commands. Efficient OpenGL routines typically result in applications with fewer lines of code than those that make up programs generated using other graphics libraries or packages. In addition, OpenGL drivers ---------- information about the underlying hardware, freeing the application developer from having to design for specific hardware features.

- Encapsulate Page no : 297
- Shows
- Hibernates
- None of the given

71)
A space curve is not confined to a plane. It is free to twist through space. To define a space curve we must use parametric functions that are ----------.

- Binary polynomials
- Mono polynomials
- Quadratic polynomials
- Cubic polynomials Page no : 326

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72) End points and an intermediate point on the curve, then we now ---------- -- quantities that we can express in terms of these coefficients (3 points x 3 coordinates each), and we can use these three points to define a unique curve.

- Six
- Three
- Two
- Nine Page no : 321

73) Bezier curve can represent the more complex piecewise _____ curve.

- **Polynomial Page no : 33**
- Exponential
- Cubic
- None of above

74)) Curve and surface equations can be expressed in either a parametric or a non parametric form.

- True
- **False Page no : 333**

75) Using a lighting model based upon the Blinn Phong model means that we'll always get a uniform specular highlight based upon the colour of the ---------- ----------light and material, which means that all reflections based on this model, will be reminiscent of plastic.

- Union
- **Refracting Page no : 291**
- Intersection
- Reflecting

76) If the current matrix (according to glMatrixMode) is multiplied by the translation matrix, with the product replacing the current matrix. That is, if M is the current matrix and T is the translation matrix, then M is replaced with ----------.

- M-T
- Page 21 of 22
- M+T
- M/T
- **M*T**

77) With similar expressions for y(u) and z(u). Again the a, b, c and d terms are constant coefficients. As we did with Equation for a plane curve, we combine the x(u), y(u) , and z(u) expressions into a single vector equation P(u) = ----------.

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- Au2+bu1+cu+d
- Au4+bu3+cu2+d1
- Au3+bu2+cu2+d
- **Au3+bu2+cu+d Page no : 326**

78) The matrix generated by gluPerspective is multiplied by the current matrix, just as if glMultMatrix were called with the generated matrix. To load the perspective matrix onto the current matrix stack instead, precede the call to gluPerspective with a call to ----------.

- glRotated
- gluPerspective
- glTranslated
- **glLoadIdentity Page no : 313**

79) Each number that makes up a matrix is called an _____ of the matrix.

- **Element Page no : 101**
- Variable
- Value
- Component

80) Which one of the following step is not involved to write pixel using video BIOS services.

- Setting desired video mode
- Using BIOS service to set color of a screen pixel
- Calling BIOS interrupt to execute the process of writing pixel.
- **Using OpenGL service to set color of a screen pixel**

81) Shadow mask methods can display a _____ range of colors.

- Small
- **Wide Page no : 29**
- Random
- Crazy

82) Using Cohen-Sutherland line clipping, it is impossible for a vertex to be labeled 1111.

- **True**
- False

83) Intensity of the electron beam is controlled by setting _____ levels on the control grid, a metal cylinder that fits over the cathode.

- Amplitude
- Current
- **Voltage Page no : 26**

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- □□Electron

84) Which of the following is NOT a modern application for Computer Graphics----------

- **► Stop-motion animation (Page 6)**
- ► Computer Aided Geometric Design
- ► Video Games
- ► Scientific Visualization

85) Both Boundary Filling and Flood filling algorithms are non-recursive techniques,

- **► False click here 4 detail**
- ► True

86)TV series are made as simply as possible from the animation point of view. This approach is generally known as ----------.

- ► Full animation
- **► Limited animation (Page 428)**
- ► Low animation
- ► High resolution

87) An eight frame run cycle that ---------- frame/frames to each step gives a fast and vigorous dash. At this speed the successive leg positions are quite widely separated and may need dry brush or speed lines to make the movement flow.

- ► Two
- ► One
- ► Three
- **► Four (Page 437)**

88) ---------- reflection is the effect of reflecting light toward the direction from which it came, no matter the orientation of the surface.

- ► Forward scattering
- ► Diffuse Lambertian
- ► Backscattering
- **► Retro (Page 293)**

89) What makes this really challenging to model is that the index of refraction for most materials is a function of the---------- of the light. This means that not only is there a shift in the angle of refraction, but that the shift is different for differing ----------of light.

- ► Reflecting angle, Reflecting angle
- ► Refracting angle, Refracting angle
- ► Frequency, Frequency
- **► Wavelength, Wavelength (Page 229)**

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90) The reflected light wave turns out to be a ----------case since light is reflected at the same angle as the incident wave (when the surface is smooth and uniform, as we'll assume for now).

- ► Abnormal
- ► Complex
- **► Simple (Page 296)**
- ► Unknow

91) Tessellation can be adaptive to the _____ degree of curvature of a surface.

- **► Local (Page 170)**
- ► Static
- ► Global
- ► Variable

92)_____ sets the reshape callback for the *current window*. The reshape callback is triggered when a window
is reshaped.

- ► glutMainLoop
- ► glutIdleFunc
- **► glutReshapeFunc (Page 312)**
- ► glutDisplayFunc

93 Signed integer color components, when specified, are linearly mapped to floating-point values such that the most positive representable value maps to 1.0, and the most negative representable value maps to ---------- -. Floating-point values are mapped directly.

- ► -1.0
- ► 0.0
- ► 2.0
- **► 1.0 (Page 320)**

94) NURBS stands for----------.

- ► Non Universal Rational Binary Spline
- ► Non Uniform Rational Binary Splines
- **► Non Uniform Rational Beta Splines (Page 325)**
- ► Non Universal Rational Beta Splines

95) An orthogonal set of vectors----------

- ► Must be a set of linearly independent vectors
- ► Must be a set of linearly dependent vectors
- **► Must be made up of the basis vectors (e1, e2, and e3)** click here 4 details
- ► Can be made up of any set of vectors

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96) Bezier curve is numerically the ---------- of all the polynomial-based curves used in these applications.

- ► None of the given
- ► **Most stable (Page 338)**
- ► Less stable
- ► Most unstable

97) Bezier curve is the ideal standard for representing the ---------- piecewise polynomial curves.

- ► None of the given
- ► Non complex
- ► Most complex
- ► **More complex (Page 338)**

98) Keep polygon orientations consistent to make sure that when viewed from the outside, all the polygons on the surface are oriented in the same direction.

- ► None of the given
- ► Neither
- ► Different
- ► **Same (page 345)**

99) The ---------- is most simple example that exhibits the property self-similarity.

- ► Mosse
- ► **Fern (Page 355)**
- ► None of the given
- ► Thohar

100) A common mistake people make when creating three-dimensional graphics is to start thinking too soon that the final image appears on a flat, two-dimensional screen. Avoid thinking about which pixels need to be drawn, and instead try to visualize ---------- space.

- ► Multi-dimensional
- ► One-dimensional
- ► Two-dimensional
- ► **Three-dimensional (Page 371)**

101) Which of the following properties of rational Bezier curves fails if the weight assigned to a control point is negative?

- ► End-point interpolation
- ► Variation Diminishing
- ► Symmetry

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- ► **Convex-Hull Click here 4 detail**

102) We want our scene to look more realistic, we should use _____ lights.

- **Ambient (Page 282)**
- Point Parallel
- Spot
- None of the given

103) This is a simple example of line clipping: the display window is the canvas and also the default ----------, thus all line segments inside the canvas are drawn.

- **Clipping Rectangle (Page 141)**
- Clipping Circle
- Clipping Polygon
- Clipping Angle

104) One problem with Gouraud shading is that the ---------- intensities can never be greater than the intensities at the edges.

- **Triangles (Page 246)**
- Squares
- Rectangles
- Polygons

105) There is more penetration of light in case of _____ surfaces.

- Conductor (like metals)
- **Nonconductor (like dielectrics) (Page 235)**
- Both conductor and nonconductor
- None of the given

106) _____ lights should be avoided because they are not for real time environment.

- Point
- Parallel
- **Spot (Page 244)**
- None of the given

107) The physical range of colors a device can display is called _____ of the device.

- Sharpness
- **Gamut (Page 229)**
- Colouring
- Colouring with Sharpness

108) _____ is simply the calculation of color reflected by the surface.

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- **Shading (Page 240)**
- Clamping
- Scaling
- None of the given

109) When obtaining normals for a triangle, which of the following mathematical constructs is NOT used?

- Vector normalization
- Vector cross products
- **Vector dot products**
- Point-Point subtraction

110) Loosely, the alpha component of the RGBA quad represents the _____of a surface.

- **Opaqueness (Page 227)**
- Light
- Darkness
- Shine

111) An algorithm that clips a polygon must deal with many ---------- cases. The case is particularly noteworthy in that the concave polygon is clipped into ---------- isolate polygons.

- Similar, three
- **Different, two (Page 146)**
- Different, three
- Similar, two

112) _____ lighting is not dependent on any source.

- **Ambient Click here for detail**
- Diffuse
- Specular
- Emissive

113)
In order to get a more realistic representation of lighting, we'll need to understand how light passes through a medium and how hitting the boundary layer at the ---------- of two media can affect light's properties.

- **Intersection (Page 296)**
- Union
- Endpoints
- Edges

114) Lambertian shading was used mostly back when computers weren't fast enough to do _____ in real time.

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- Phong shading
- Processing
- Shading
- **Gouraud shading (Page 245)**

115)
In Perspective Projection the point of View (POV) must lie on the _____.

- All axis
- **Z axis (Page 200)**
- X axis
- Y axis

116) If we want any object to glow, we should use _____ lights.

- Ambient
- Diffuse
- Specular
- **Emissive (Page 240)**

117) There are not many different ways of representing the intensity of a particular color element.

- True
- **False (Page 276)**

118) In Perspective Projection the screen plane must be parallel to the_____.

- Y-Z plane
- **X-Y plane (Page 200)**
- Z-Y plane
- X-Z plane

119) _____ light is reflected in all directions from surface.

- Ambient
- **Diffuse (page 239)**
- Specular
- Emissive

120) A space curve can be confined to a plane.

- Yes
- **No (Page 331)**

121) To convert the information in the A matrix into that required for the P matrix, we do some simple matrix algebra, First we have UA=UNP then Simply A = ----------

- UP

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- **NP (Page 333)**
- UN
- None

122) Perspective projection is specified with the function glFrustum().

- **Yes (Page 376)**
- No

122) Choose a camera lens or adjust the zoom

- **projection transformation (Page 372)**
- viewport transformation
- modeling transformation'
- viewing transformation

123) Using a lighting model based upon the Blind Phong model means that we'll always get a uniform specular highlight based upon the color of the ---------- light and material, which means that all reflections based on this model, will be reminiscent of plastic.

- Union
- Refracting
- Intersection
- **Reflecting (Page 296)**

124) Refractive index is a function of temperature, mostly due to density changes in materials with changes in temperature.

- **True (Page 300)**
- False

125)

Length L depends on the angle alpha and the z coordinate of the point to be projected and L can be represented by ----------.

- **z * 1/ tan (alpha) (Page 198)**
- z * L2
- z * 1/ tan (beta)
- z * 1/ tan (gamma)

126) The traditional approach in real-time computer graphics has been to calculate lighting at a vertex as a sum of the _____ light.

- Ambient
- **Ambient, diffuse, and specular (Page 281)**
- Specular
- Diffuse, and specular

127)

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Another way to define a space curve by using intermediate points and the tangents at each end for making the
curve

- Yes
- **No (Page 334)**

128) An independent consortium, the OpenGL Architecture Review Board, guides the OpenGL specification. With broad industry support, OpenGL is the only truly open, vendor-neutral, ---------- graphics standard.

- Tertiary
- Binary
- Single platform
- **Multiplatform (Page 301)**

129) glutReshapeWindow requests a change in the size of the current window. The width and height parameters are size extents in pixels. The width and height must be ---------- values.

- Neutral
- Negative
- **Positive (Page 311)**
- None of the given

130) A space curve is not confined to a plane. It is free to twist through space. To define a space curve we must use parametric functions that are ----------.

- Binary polynomials
- Mono polynomials
- Quadratic polynomials
- **Cubic polynomials (Page 331)**

131)

Refractive index is a function of temperature, mostly due to changes in ---------- -------- of materials with changes in temperature. A simple correction can be applied in most circumstances to allow us to use a value given at one temperature at another.

- **Density (Page 300)**
- pressure
- nature
- volume

132) If we assign a different value to the parametric variable for the intermediate point, then we obtain different values for the coefficients. This, in turn, means that a different curve is produced, although it passes through the ---------- three points.

- isolate

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- different
- **same (Page 328)**
- none

133) The attenuation formula is f =----------, where C, L and Q are the constant, linear and quadratic attenuation factors and d is the distance between the vertex being lit and the light source.

- **1/(C + Ld + Qd2) Click here for detail**
- 1/(C + Ld + Qd)
- 1/(C + L +d + Qd2)
- 1/(Cd + Ld + Qd2)

144) Bezier curve is tangent to the lines connecting _____.

- First two points
- Last two points
- **Fist two points and last two point (Page 340)**
- None of the given

145) End points and an intermediate point on the curve, then we now ---------- ----- quantities that we can express in terms of these coefficients (3 points x 3 coordinates each), and we can use these three points to define a unique curve.

- Six
- Three
- Two
- **Nine (Page 326**

146) Choose a camera lens or adjust the zoom

- **projection transformation (Page 372)**
- viewport transformation
- modeling transformation
- viewing transformation

148) _____ OpenGL function is used for aiming and positioning the camera towards the object

- **glLoadIdentity() (Page 375)**
- gluLookAt()
- glFrustum()
- None of Above

149) A parametric curve is one whose defining equations are given in terms of a ---------, common, independent variable called the parametric variable.

- Triple
- Double

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- **Single (Page 325)**
- None of the given

150) The reflection coefficients are in the ---------- range and are specified as part of the material property. However, they are strictly empirical and since they simply adjust the overall intensity of the material color, the material color values are usually adjusted so the color intensity varies rather than using a reflection coefficient.

- [0, 10]
- **[0, 1] (Page 281)**
- [0, 5]
- [0, 2]

151) To ensure a smooth transition from one section of a piecewise _____ to the next, we can impose various continuity conditions at the connection points non parametric curve parametric curve

- **polygon vector (not confirm) (Page 245)**
- None of the these

152) The curve is always contained within the _____ of the control points

- Tangents
- **Convex Hull (Page 340)**
- Subdivision
- None of Above

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