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| LOGO_4 | **CS602- Computer Graphics**  **Solved MCQS**  **From Finalterm Papers** | **Feb 27,2014** |
| **MC100401285** | [**Moaaz.pk@gmail.com**](mailto:Moaaz.pk@gmail.com)[**Mc100401285@gmail.com**](mailto:Mc100401285@gmail.com) | **PSMD01** |
| **FINALTERM EXAMINATION**  **Spring 2010**  **CS602- Computer Graphics**  **Question No: 1 ( Marks: 1 ) - Please choose one**  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    **Question No: 2 ( Marks: 1 ) - Please choose one**  Both Boundary Filling and Flood filling algorithms are non-recursive techniques,  **► False** [**click here 4 detail**](http://en.wikipedia.org/wiki/Flood_fill)  ► True    **Question No: 3 ( Marks: 1 ) - Please choose one**  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    **Question No: 4 ( Marks: 1 ) - Please choose one**  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)**    **Question No: 5 ( Marks: 1 ) - Please choose one**  ----------- 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)**    **Question No: 6 ( Marks: 1 ) - Please choose one**  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)**    **Question No: 7 ( Marks: 1 ) - Please choose one**  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)**  ► Unknown    **Question No: 8 ( Marks: 1 ) - Please choose one**  Tessellation can be adaptive to the \_\_\_\_\_\_\_ degree of curvature of a surface.  **► Local (Page 170)**  ► Static  ► Global  ► Variable    **Question No: 9 ( Marks: 1 ) - Please choose one**  \_\_\_\_\_\_\_\_\_\_ sets the reshape callback for the *current window*. The reshape callback is triggered when a window is reshaped.  ► glutMainLoop  ► glutIdleFunc  **► glutReshapeFunc (Page 312)**  ► glutDisplayFunc    **Question No: 10 ( Marks: 1 ) - Please choose one**  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)**    **Question No: 11 ( Marks: 1 ) - Please choose one**  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    **Question No: 12 ( Marks: 1 ) - Please choose one**  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](http://mathworld.wolfram.com/OrthogonalSet.html)  ► Can be made up of any set of vectors    **Question No: 13 ( Marks: 1 ) - Please choose one**  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    **Question No: 14 ( Marks: 1 ) - Please choose one**  Bezier curve is the ideal standard for representing the ---------------------------- piecewise polynomial curves.  ► None of the given  ► Non complex  ► Most complex  **► More complex (Page 338)**    **Question No: 15 ( Marks: 1 ) - Please choose one**  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)**    **Question No: 16 ( Marks: 1 ) - Please choose one**  The ---------------- is most simple example that exhibits the property self similarity.  ► Mosse  **► Fern (Page 355)**  ► None of the given  ► Thohar    **Question No: 17 ( Marks: 1 ) - Please choose one**  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)**    **Question No: 18 ( Marks: 1 ) - Please choose one**  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** [**Click here 4 detail**](http://cagd.cs.byu.edu/~557/text/ch2.pdf)    **Question No: 19 ( Marks: 1 ) - Please choose one**  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**  ► 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)    **Question No: 20 ( Marks: 1 ) - Please choose one**  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**  ► Diffuse  ► Ambient    **Question No: 21 ( Marks: 1 ) - Please choose one**  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    **Question No: 22 ( Marks: 1 ) - Please choose one**  The ColorSpace 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 235)**    **Question No: 23 ( Marks: 1 ) - Please choose one**  A polygon is usually defined by a sequence of ------------- and Edges.  ► Ending lines  ► Points  **► Vertices (Page 248)**  ► Edges    **Question No: 24 ( Marks: 1 ) - Please choose one**  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**  ► Symmetry  ► Convex-Hull  **Question No: 25 ( Marks: 1 ) - Please choose one**  Parity is a concept used to determine which \_\_\_\_\_\_\_\_\_\_\_\_\_ lie within a polygon. (Choose best suitable answer)  ► Edge  ► Vertices  **► Pixel (Page 80)**  ► None of the given    **Question No: 26 ( Marks: 1 ) - Please choose one**  The actual filling process in boundary filling algorithm begins when a point \_\_\_\_\_\_\_\_\_\_\_\_\_ of the figure is selected.  ► Outside the boundary  **► Inside the boundary (Page 102)**  ► At boundary  ► None of the given    **Question No: 27 ( Marks: 1 ) - Please choose one**  Weiler-Atherton Polygon Clipping technique modifies the vertex-processing procedures for window boundaries so that \_\_\_\_\_\_\_\_\_ polygons are displayed correctly.  ► Convex  **► Concave (Page 155)**  ► Complex  ► None of the given    **Question No: 28 ( Marks: 1 ) - Please choose one**  If a line connecting any two points within a polygon does not intersect any edge, then it will be a \_\_\_\_\_\_\_\_\_ polygon.  **► Convex (Page 79)**  ► Concave  ► Complex  ► None of the given    **Question No: 29 ( Marks: 1 ) - Please choose one**  \_\_\_\_\_\_\_\_\_\_ 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  **► Projection (Page 193)**    **Question No: 30 ( Marks: 1 ) - Please choose one**  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 296)**  ► Complex  ► Abnormal  **FINALTERM EXAMINATION**  **Spring 2010**  **CS602- Computer Graphics**  **Question No: 1 ( Marks: 1 ) - Please choose one**  Computer graphics and computer vision are \_\_\_\_\_\_\_\_ disciplines.  **Related (Page 24)**  Interrelated  Same  Different  **Question No: 2 ( Marks: 1 ) - Please choose one**  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.  2-Dimensional  3-Dimensional  **2-Dimensional and 3-Dimensional (Page 301)**  **Question No: 3 ( Marks: 1 ) - Please choose one**  -------- 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 (Page 313)**  glutKeyboardFunc  glutReshapeFunc  glutDisplayFunc  **Question No: 4 ( Marks: 1 ) - Please choose one**  X2/a2 – y2/b2 =1 is an equation of  **Hyperbola (Page 70)**  Parabola ( 4px=y2)  None of given  Ellipse (X2/a2 + y2/b2 =1)  **Question No: 5 ( Marks: 1 ) - Please choose one**  To modify the object shape, shearing transformation cannot be used.  **False (Page 192)**  True  **Question No: 6 ( Marks: 1 ) - Please choose one**  Rotation is performed around a fixed point called \_\_\_\_\_\_.  **Pivot point rotation (Page 119)**  **Question No: 7 ( Marks: 1 ) - Please choose one**  Computer graphics is very helpful in producing graphical representations for scientific visualization and analysis  **True (Page 9)**  False  **Question No: 8 ( Marks: 1 ) - Please choose one**  Save a line with both endpoints inside all clipping boundaries.  Trivial Reject  **Trivial Accept (Page 142)**  None of given  **Question No: 9 ( Marks: 1 ) - Please choose one**  Dark lights are nothing more than lights in which one or more of the color values are \_\_\_\_\_.  Unknown  **Negative (Page 235)**  Positive  Zero  **Question No: 10 ( Marks: 1 ) - Please choose one**  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 371)**  Two  Four  Ten  **Question No: 11 ( Marks: 1 ) - Please choose one**  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 398)**  **Question No: 12 ( Marks: 1 ) - Please choose one**  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 194)**  Oblique Parallel Projection  **Question No: 13 ( Marks: 1 ) - Please choose one**  In the Phong Reflection model, \_\_\_\_\_\_\_ light is the same everywhere.  **Ambient**  Diffuse  Specular  Emissive  **Question No: 14 ( Marks: 1 ) - Please choose one**  A plane is two dimensional since in order to uniquely define any point on its surface we require \_\_\_\_\_\_\_ numbers.  **Two (Page 356)**  Three  Four  Five  **Question No: 15 ( Marks: 1 ) - Please choose one**  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 200)**  None  **Question No: 16 ( Marks: 1 ) - Please choose one**  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 321)**  **Question No: 17 ( Marks: 1 ) - Please choose one**  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.  Unit  **Normal (Page 400)**  None of given  **Question No: 18 ( Marks: 1 ) - Please choose one**  Which was the oldest shading model?  **Flat Shading (Page 245)**  Phong Shading  Gouraud Shading  **Question No: 19 ( Marks: 1 ) - Please choose one**  Which of the following affine transforms does NOT affect vectors?  Scale  Rotation  Shear  **Translation**  **Final Term MCQS and Quizzes**    **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  We want our scene to look more realistic, we should use \_\_\_\_\_\_\_\_\_ lights.  **Ambient (Page 282)**  Point Parallel  Spot  None of the given  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  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    **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_ lights should be avoided because they are not for real time environment.    Point  Parallel  **Spot (Page 244)**  None of the given  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  The physical range of colors a device can display is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the device.    Sharpness  **Gamut (Page 229)**  Colouring  Colouring with Sharpness    **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is simply the calculation of color reflected by the surface.    **Shading (Page 240)**  Clamping  Scaling  None of the given    **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  Loosely, the alpha component of the RGBA quad represents the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of a surface.  **Opaqueness (Page 227)**  Light  Darkness  Shine  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  An algorithm that clips a polygon must deal with many ----------------- cases. The case is particularly note worthy in that the concave polygon is clipped into ----------- isolate polygons.    Similar, three  **Different, two (Page 146)**  Different, three  Similar, two  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_\_\_ lighting is not dependent on any source.    **Ambient** [**Click here for detail**](https://www.google.com.pk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=3&cad=rja&ved=0CDYQFjAC&url=http%3A%2F%2Fusers.ece.gatech.edu%2F~lanterma%2Fmpg10%2Fmpglecture05f10_lightrast.pdf&ei=dCIPU5HLAqmM5ATj7oCQAQ&usg=AFQjCNGYSVqBHZV2TSnujjQAhydgNiHrvA&sig2=GKFnck-mYjOxrraj1aku_g&bvm=bv.61965928,d.bGE)  Diffuse  Specular  Emissive  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  Lambertian shading was used mostly back when computers weren't fast enough to do \_\_\_\_\_\_\_\_ in real time.    Phong shading  Processing  Shading  **Gouraud shading (Page 245)**  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  In Perspective Projection the point of View (POV) must lie on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.    All axis  **Z axis (Page 200)**  X axis  Y axis    **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  If we want any object to glow, we should use \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ lights.    Ambient  Diffuse  Specular  **Emissive (Page 240)**    **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  There are not many different ways of representing the intensity of a particular color element.  True  **False (Page 276)**  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_\_\_ light is reflected in all directions from surface.  Ambient  **Diffuse (page 239)**  Specular  Emissive    **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  A space curve can be confined to a plane.  Yes  **No (Page 331)**  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  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  **NP (Page 333)**  UN  None  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  Perspective projection is specified with the function glFrustum().  **Yes (Page 376)**  No  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  Choose a camera lens or adjust the zoom  **projection transformation (Page 372)**  viewport transformation  modeling transformation'  viewing transformation  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  Using a lighting model based upon the Blinn 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)**  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  Refractive index is a function of temperature, mostly due to density changes in materials with changes in temperature.  **True (Page 300)**  False    **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  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)  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  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)**    **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  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)**  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  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)**  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  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    **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  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  different  **same (Page 328)**  none    **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  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**](https://github.com/pilkch/library/blob/master/src/breathe/audio/audio_sdlmixer.cpp)  1/(C + Ld + Qd)  1/(C + L +d + Qd2)  1/(Cd + Ld + Qd2)  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  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)**    **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  Choose a camera lens or adjust the zoom  **projection transformation (Page 372)**  viewport transformation  modeling transformation  viewing transformation  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_ OpenGL function is used for aiming and positioning the camera towards the object    **glLoadIdentity() (Page 375)**  gluLookAt()  glFrustum()  None of Above    **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  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 325)**  None of the given    **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  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]    **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  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  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  The curve is always contained within the \_\_\_\_\_\_\_ of the control points    Tangents  **Convex Hull (Page 340)**  Subdivision  None of Above    **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  Projection can be defined as a mapping of point P(x, y, z) onto its image P`(x`, y`, z` ) in the ----------------, which constitutes the display surface. The mapping is determined by a projection line called the projector that passes through P and intersects the ----------------.    Two Coordinate Planes  **View plane or projection plan (Page 193)**  Three Coordinate Planes  Mapping plane  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  Determine how large we want the final photograph to be - for example, we might want it enlarged    projection transformation  **viewport transformation (Page 372)**  modeling transformation  viewing transformation  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  Ambient light is the light that comes from ----------------------directions, thus all surfaces are illuminated equally regardless of orientation. However, this is a big hack in traditional lighting calculations since "real" ambient light really comes from the light reflected from the "environment."    **All (Page 281)**  Opposite  Same  Four different  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  Silhouette edges occur when dot product of surface normal vector and the view vector is \_\_\_\_\_\_\_\_\_\_.    **Zero (Page 345)**  One  Both zero and one    **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  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  M+T  M/T  **M\*T (Page 317)**  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  Arrange the scene to be photographed into the desired composition    projection transformation  viewport transformation  **modeling transformation (Page 317)**  viewing transformation  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  In the forms of texture mapping, Image to world space and world space to image, each suffers from different problems related to minification and magnification. Which of the two shows the following problem: When the texture is larger than the screen space it maps to, many texture units (texels) are never sampled?    Image to world space  **World space to image**  X-axis  Y-axis  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  Imagine a curve in three-dimensional space, each point on the curve has a unique set of coordinates: a specific x value, y value, and z value. Each coordinate is controlled by a -------------- parametric equation.    Opposite  Similar  **Separate (Page 325)**    **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  We allow the parametric variable to take on values only in the interval ----------------.    -1 <= u <= 0  0 <= u <= 2  **0 <= u <= 1 (Page 326)**  -1 <= u <= 1  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  Bezier curve can represent the more complex piecewise \_\_\_\_\_\_\_\_\_\_\_ curve.  **Polynomial (Page 338)**  Exponential  Cubic  None of above    **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  A fractal is generally a property called \_\_\_\_\_\_\_\_\_\_\_.  Fractal Dimension  **Self-similarity (Page 355)**  Koch Curve  None of above    **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  Normalized cross product of two vectors on that surface provides normal vector    **Yes (Page 347)**  No  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  Every point on a curve has a straight line associated with it called the \_\_\_\_\_\_\_\_\_\_    State line  **tangent line (Page 334)**  curved line  None of the given  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  The value returned is a unique small integer identifier for the window. The range of allocated identifiers starts at --------------------. This window identifier can be used when calling glutSetWindow.    Three  Two  **One (Page 308)**  Zero  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  Curve and surface equations can be expressed in either a parametric or a non parametric form.  **True** [**click here for detail**](http://www.slideshare.net/akbrightfuture/computer-graphics-hearn-baker)  False  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  Bernstein polynomial functions are the basic functions of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ curves.    NURBS  **Bezier (Page 342)**  Both NURBS and Bazier  None of the given    **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  Geometric patterns that is repeated at ever smaller scales to produce irregular shapes and surfaces are called \_\_\_\_\_\_\_\_\_\_\_    Geometric patterns  **Fractals (Page 352)**  Animated components  Segments    **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  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**  Diffuse  Specular  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  This projection technique does NOT have the direction of projection perpendicular to the viewing plane.  a) Orthographic Parallel Projection  b) Axonometric Parallel Projection  **c) Oblique Parallel Projection (Page 197)**    **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  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?  **a) GL\_MODELVIEW**  b) GL\_PROJECTION  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  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?  a) GL\_MODELVIEW  **b) GL\_PROJECTION**  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  Which of the following is the order that geometry operations are performed in OpenGL (where we read the order from left to right)?  a) GL\_PROJECTION GL\_MODELVIEW Perspective division  **b) GL\_MODELVIEW GL\_PROJECTION Perspective division**  c) Perspective division GL\_PROJECTION GL\_MODELVIEW  d) GL\_MODELVIEW Perspective division GL\_PROJECTION  e) GL\_PROJECTION Perspective division GL\_MODELVIEW    **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  Which of the following is NOT true about quaternions?  a) They are made up of 4 numbers  b) They should always be normalized to length 1  **c) They can be used to represent all affine transforms**  d) They can be used to define the rotation of an object  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  In class, we discussed three forms of shading for “Utah” graphics. Which was the first to use per vertex normals?  **a) Flat Shading (Page 245)**  b) Phong Shading  c) Gouraud Shading  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  Given any implicit equation, which of the following is true for all (x, y, z) that make the equation exactly zero?  a) All those points are inside the object defined by the implicit equation  **b) All those points are on the surface of the object defined by the implicit equation** [**Click here 4 detail**](https://www.google.com.pk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CCkQFjAA&url=http%3A%2F%2Fwwwx.cs.unc.edu%2F~jwendt%2Fclasses%2FCOMP136%2Fquizzes%2Fquiz6Answers.doc&ei=XyUPU4x65PHhBMnXgJAM&usg=AFQjCNFQRxoK6wrO95hKFrgBzbTlqiLeZw&sig2=d_WYdYHjI0VGOXp-RpeIjg&bvm=bv.61965928,d.bGE)  c) All those points are outside the object defined by the implicit equation  d) You can’t know anything without knowing what the implicit equation is  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  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?  a) The ray intersects the sphere at a negative t… discard this result  b) The ray intersects the sphere at a positive t… continue to the solution  **c) The ray does not intersect the sphere… discard this result**  d) The ray begins inside the sphere… this is a special case    **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ 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 (Page 313)**  glutMainLoop  glutDisplayFunc  glutReshapeFunc    **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  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 336)**  None of the given    **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  The degree of a Bezier curve is equal to n-1, where n is the number of control points    **Yes (Page 339)**  No    **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  Bit mask to select a window with multisampling support. If multisampling is not available, a ----------------- window will automatically be chosen.    **Non-multisampling (Page 310)**  Multisampling  Mono-multisampling  Di-multisampling  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  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 302)**  Shows  Hibernates  None of the given    **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  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) = --------------------.  Au2+bu1+cu+d  Au4+bu3+cu2+d1  Au3+bu2+cu2+d  **Au3+bu2+cu+d (Page 331)**  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  Each number that makes up a matrix is called an \_\_\_\_\_\_\_\_\_\_ of the matrix.  **Element (Page 106)**  Variable  Value  Component  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  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 (Page 318)**  glTranslated  glLoadIdentity  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  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 (Page 45)**    **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  Shadow mask methods can display a \_\_\_\_\_\_\_\_\_\_ range of colors.  Small  **Wide (Page 28)**  Random  Crazy  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  Using Cohen-Sutherland line clipping, it is impossible for a vertex to be labeled 1111.  **True**  False  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  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 26)**  Electron  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  The circle and ellipse are symmetric across 8 octants.  o True  **o False (Page 60)**  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  UV light is used in Plasma Panel displays to excite phosphor.  **o True** [Click here for detail](http://www.audioholics.com/hdtv-formats/display-technologies-guide-lcd-plasma-dlp-lcos-d-ila-crt/display-technologies-guide-lcd-plasma-dlp-lcos-d-ila-crt-page-3)  o False  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  Which of the following is not true about matrices?  o A + B = B + A  o a(A + B) = aA + aB  **o (AT)T = AT**  o A + (B + C) = (A + B) + C  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  According to Odd Parity Rule, a point is inside the polygon, if:  o Line from an outside point to this point does not cross the edges odd number of times  o Line from any point to this point crosses the edges odd number of times  **o Line from an outside point to this point crosses the edges odd number of times (Page 80)**  o Line from this point to any point outside the polygon intersects any edge  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  As opposed to direct memory access method, BIOS routines provide an easier and faster method of drawing pixels on screen.  o True  **o False (Page 47)**  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  When a point P(x,y) is rotated by θ the coordinates of transformed point P' are given as:  **x' = x cos(θ) – y sin(θ), y' = x sin(θ) + y cos(θ) (Page 181)**  x' = y cos(θ) – x sin(θ), y' = y sin(θ) + x cos(θ)  x' = x cos(θ) + y sin(θ), y' = x sin(θ) – y cos(θ)  x' = y cos(θ) + x sin(θ), y' = y sin(θ) – x cos(θ)  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  The amount of time it takes to illuminate a specific location on phosphor coated screen is called Persistence.  o True  **o False (Page 27)**    **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  Incremental line drawing algorithm makes use of the equation of straight line.  True  **False (Not sure)**  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  In matrix multiplication:  o The two matrices must be square  **o The number of rows of 1st matrix must be the same as the number of columns of the second**.  o The two matrices must either be row matrices or column matrices  o The number of columns of 1st matrix must be the same as the number of rows of the second.  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  In Horizontal retrace, after completion of all the pixels in a scan line, the refreshing continues from the 1st pixel of the next scan line.  o True  **o False (Page 28)**  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  Parity Rule is used to determine whether a pixel is inside a polygon or not.  **o True (Page 80)**  o False  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  When dot product of two vectors equals zero, this implies that the two vectors are:  parallel to each other  **orthogonal (perpendicular) to each other. (Page 177)**  intersect each other  equal to each other  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  In Pixmap exactly one bit is used to hold color value of each pixel.  o True  **o False (Page 28)**  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  The Boundary Fill and Flood Fill algorithms:  o Must use 4-connected approach  o Must use 8-connected approach  **o May use 4-connected or 8-connected approach** [**click here for details**](http://books.google.com.sa/books?id=xIKK9RcSTR4C&pg=PA22&lpg=PA22&dq=The+Boundary+Fill+and+Flood+Fill+algorithms+may+use+4+connected&source=bl&ots=a3NkYvPwp3&sig=3TqvdyDhLwzu4eWWo-XK2XmMcOE&hl=en&sa=X&ei=N3UMU_njHKGu0QXSh4DQDw&ved=0CDMQ6AEwAQ#v=onepage&q=T)  o Must not use recursive approach  **Question #4 of 10 ( Total Marks: 1 ) Select correct option:**  To show 256 colors, the no of bits required for each pixel are  **a. 8 (Page 39)**  b. 16  c. 32  d. 64  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  25 \* 80 resolution with 16 colors supports  **a. Text mode (Page 43)**  b. Graphics mode  c. Both  d. None  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  Two matrices are said to be equal, if they have  a. same order  b. same corresponding elements  **c. Same order and same corresponding elements.**  d. Different elements.  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  Two points are said to be collinear, if they lie on the  **a. same line (page 53)**  b. different but parallel lines  c. either on the same plane or two parallel planes  d. different plane  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  A Polygon is convex, if the line connecting:  a. Any two points outside the polygon intersects its boundary  **b. Any two points inside the polygon don’t intersect any edges of the polygon. (Page 78)**  c. A point inside the boundary with any point outside, does not intersect the polygon boundary  d. Any two vertices, intersects some edge of polygon.  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  Polygon is complex, if the line connecting:  a. Any two points outside the polygon intersects its boundary.  b. Any two points inside the polygon intersects its boundary.  c. A point inside the boundary with any point outside does not intersect the polygon boundary.  **d. Any two vertices, intersects some edge of polygon. (Page 79)**  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  The equation of hyperbola centered at origin (if the transverse axis is along x -axis) can be  given as:  a. x2 b2+ y2 a2–1 = 0  b. x2 b2+ y2 a2+1 = 0  **c. x2 a2– y2 b2–1 = 0** [**Click here for detail**](https://www.google.com.pk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=5&cad=rja&ved=0CDkQFjAE&url=http%3A%2F%2Fmath.ucr.edu%2F~blopez%2Fchc%2Fpresente%2F10fallmath102%2F8.3&ei=vicPU-T2A-Tx4QTJ14CQDA&usg=AFQjCNHN8QIzzJ-S-SVWbyifnGEZsUhZbA&sig2=weqYUJl0EYFOgR2aWHRoPg&bvm=bv.61965928,d.bGE)  d. x2 b2 – y2 a2–1 = 0  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  Which one is not valid out code to perform trivial accept / reject test in line clipping:  a. 1101  **b. 1001 (Page 143)**  c. 0101  d. 0110  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  Which one of the following is not the graphics library is use:  a. FastGL  b. OpenGL  c. DirectX  **d. EasyGL (Page 42)**  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  In video text memory, \_\_\_\_\_\_ are used to display a character.    **2 bytes (Page 43)**  4 bytes  8 bytes  16 bytes  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  In \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ algorithm(s), old color must be read before it is invoked.  Scan line filling  **Flood filling (Page 104)**  Both scan line and flood filling  Scan filling  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  According to the architecture of raster graphics system, display processor memory will act as\_\_\_\_\_\_\_\_\_.  **Video controller (Page 36)**  System memory  Frame buffer  Video controller and System memory  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  Global coordinate systems can be defined with respect to local coordinate system    True  **False (Page 255)**  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  Cross product of two vectors result in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Magnitude  **Vector (Page 347)**  Scalar  Value  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  Shortcoming of Sutherland-Hodgeman Algorithm is concave polygons may be displayed with  extraneous lines    **True (Page 155)**  False  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  In 2D transformations, rotations applied to a point P can be denoted as\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (Where? represents theta).    **P' = R(θ1 + θ2) . P (Page 119)**  P' = (R(?1) + R(?2)) . P  P' = R(?1 x ?2) . P  P' = R(?1) . P  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  A straight line can be moved to another location by applying \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to each of the line endpoints and redrawing the line between the new coordinates.  Rotation  **Translation (Page 118)**  Reflection  Scaling factor  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  If the values of scaling factors sx and sy are less than 1, then size of object will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.    **Reduced (Page 121)**  Remain same  Enlarged  Shear    **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  Locations can be translated or "transformed" from one coordinate system to the other.    **True (Page 163)**  False  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  If the value of scaling factors sx and sy is greater than 1, then size of objects will be \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  Reduced  **Enlarged (Page 121)**  Remain same  Shear    **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  A column matrix is also known as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.    **Column vector (Page 107)**  Row vector  Vector  Simple Matrix  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  Dot product of two vectors results in \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ quantity.  **Scalar (Page 176)**  Vectors  Magnitude  Value    **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  Set up your tripod and pointing the camera at the scene  projection transformation  viewport transformation  modeling transformation  **viewing transformation (Page 372)**  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_ is based on characteristic size or scale    Fractal Geometry  Traditional Geometry  **Euclidean Geometry (Page 359)**  None of Above  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  Bernstein polynomial functions are the basic functions of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ curves.    NURBS  **Bezier (Page 342)**  Both NURBS and Bazier  None of the given    **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  Which of the following does NOT figure into the Field of View of a pinhole camera?  **a) The direction of projection**  b) The distance from the center of projection to the projection plane  c) The size of the projection plane    **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  When transforming a random Axis-Aligned Bounding Box defined by the points (nearx, neary, nearz) and (farx, fary, farz) to the standard orthographic viewing box, which affine transforms are used?  a) shear and translation  b) rotation and scale  c) scale and shear  **d) translation and scale**  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  In class, we discussed the purpose of the front and back clipping planes in OpenGL. Which of the following was NOT a purpose for using clipping planes?  a) division by zero  b) objects behind the center of projection mapping onto the projection plane  **c) avoiding the problems of infinite viewing volume size**  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  In class, we discussed how the image of the Double Eagle Tanker was obtained for the large poster in the main hall of Sitterson. It required rendering several perspective images using OpenGL. Which of the following was NOT a step required in that process?  a) handling projection planes non-orthogonal to the viewing direction  b) cutting a single projection plane into many separate projection planes  c) rotating the viewing direction to be the same as the –z direction  **d) handling several different centers of projection**  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  In “Utah” graphics, lights are simplified in order to approximate light/matter interaction with a minimum amount of work. Which of the following is NOT true about the simplifications made in “Utah” graphics lights?  a) Light intensity and color are folded into one value.  b) Lights are assumed to have zero size  **c) Spotlights cannot be handled**  d) Soft shadows cannot be handled    **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  The Phong reflection model simplifies light-matter interactions into (essentially) 4 vectors and a number of constants. Which of the following is NOT a vector needed for the Phong reflection model?  a) Surface Normal  b) Direction to Viewer  **c) Direction to Material Center**  d) Direction to Light  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  In the Phong Reflection model, ambient light is the same everywhere.  **a) true**  b) false    **Question #6 of 10 ( Total Marks: 1 ) Select correct option:**  We discussed several global illumination algorithms in class. Which of the following listed can properly handle diffuse-diffuse reflections  a) Ray Tracing  **b) Radiosity**  c) Photon Mapping  d) RenderMan  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  We discussed several global illumination algorithms in class. Which of the following is generally characterized by shiny spheres and checkerboards?  **a) Ray Tracing**  b) Radiosity  c) Photon Mapping  d) RenderMan  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  We discussed several global illumination algorithms in class. Which of the following listed can properly handle caustics?  a) Ray Tracing  b) Radiosity  **c) Photon Mapping**  d) RenderMan  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  In radiosity a matrix is formed of size mxm. Which of the following can be known if the (i, j) position in the matrix is zero?  a) patch i is much larger than patch j  b) patch i is much smaller than patch j  c) patch i is visible from patch j  **d) patch i is not visible from patch j**    **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  When solving for ray-polygon intersections, after intersecting the ray with a plane, the dominant component of the plane normal is found. this is used to  a) ignore any component other than the dominant when you project to 2D  **b) ignore the dominant component when you project to 2D**  c) solve the inside-outside test only for that component  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  If solving for inside-outside of a triangle using barycentric coordinates, and you have two barycentric coordinates solved (bc1 = .57, bc2 = .62) which of the following do you know?  **a) The point is outside the triangle**  b) The point is on the boundary of the triangle  c) The point is inside the triangle  d) The hit point is on the “back face” of the triangle  **Question # 2 of 10 ( Total Marks: 1 ) Select correct option:**  The majority of the execution time of a ray tracer is spent in ray-object intersection code.  **a) true**  b) false  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  Snell’s law is used to calculate which one of the following rays?  a) start rays  b) shadow rays  c) reflection rays  **d) transmission rays**  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  You might as well recurse on reflection and transmission rays until you hit nothing. This always is bound to happen.  a) true  **b) false**    **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  Which of the following Ray Tracing additions works to remove jaggies alone?  **Mkkg**  b) jittering  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  In the Pixar short “Geri’s Game”, the character Geri was created using which of the following techniques?  a) Fractals  b) Bump mapping  c) Environment mapping  **d) Catmull-Clark Subdivision Surfaces**  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  In the Pixar short “Geri’s Game”, the trees in the background were created using which of the following techniques?  **a) Fractals**  b) Bump mapping  c) Environment mapping  d) Catmull-Clark Subdivision Surfaces  **Question # 8 of 10 ( Total Marks: 1 ) Select correct option:**  The basic functions fi(u) in Bezier curve must be symmetric with respect to u and (u-2)  yes  **no (Page 341)**  **Question # 9 of 10 ( Total Marks: 1 ) Select correct option:**  In the Pixar short “Geri’s Game”, Geri’s glasses seemed to bend the light as it passed through.  Which of the following techniques was used?  a) Fractals  b) Bump mapping  **c) Environment mapping**  d) Catmull-Clark Subdivision Surfaces  **Question # 10 of 10 ( Total Marks: 1 ) Select correct option:**  A polygon is usually defined by a sequence of vertices and ------------------  **Edges (Page 146)**  Vertices  PointsEnding lines  **Question # 1 of 10 ( Total Marks: 1 ) Select correct option:**  Gouraud shading is the current de jure shading standard in accelerated ------------ hardware.  2Dimensional  **3Dimensional (Page 245)**  Multidimensional  None  **Question #2 of 10 ( Total Marks: 1 ) Select correct option:**  \_\_\_\_\_\_\_\_\_ is based on characteristic size or scale    Fractal Geometry (Fractal shapes are self similar and independent of size or scaling)  Traditional Geometry  **Euclidean Geometry (Euclidean shapes normally have a few characteristic sizes or length**  **scales) (Page 359)**  None of Above  **Question # 3 of 10 ( Total Marks: 1 ) Select correct option:**  Arrange the scene to be photographed into the desired composition  projection transformation  viewport transformation  **modeling transformation (Page 372)**  viewing transformation  **Question # 4 of 10 ( Total Marks: 1 ) Select correct option:**  Which language API defines graphics operations independent of the operating system or computer hardware? Additional hardware specific libraries are used to provide an interface between API and the hardware and between the user and the platform specific windowing system.  a. DirectX  b. Graphix Windowing Toolkit  c. CGI  **d. OpenGL (Page 302)**  **Question # 5 of 10 ( Total Marks: 1 ) Select correct option:**  When transforming a random Axis-Aligned Bounding Box defined by the points (nearx, neary, nearz) and (farx, fary, farz) to the standard orthographic viewing box, which affine transforms are used?  a) shear and translation  b) rotation and scale  c) scale and shear  **d) translation and scale**  **Question # 6 of 10 ( Total Marks: 1 ) Select correct option:**  The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ functions multiply the current matrix by a rotation matrix.    **glRotated** and **glRotatef** (Page 318)  **Question # 7 of 10 ( Total Marks: 1 ) Select correct option:**  Match the pictures on the right with the corresponding term on the left. The arrows in the picture denote light rays. The dashed lines represent the material type to be considered. The key is in the interaction of the light rays with the material.  (b)  Specular  Diffuse  (a)  Transparent  Translucent  (d)  (c)  **b,d,c,a** [**Click here for detail**](https://www.google.com.pk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&cad=rja&ved=0CCcQFjAA&url=http%3A%2F%2Fwwwx.cs.unc.edu%2F~jwendt%2Fclasses%2FCOMP136%2Fquizzes%2Fquiz3Answers.doc&ei=qDIPU8GnAeTx4QTJ14CQDA&usg=AFQjCNHVkj6SkpBUt9ZpFpGAYe6TJTc-bw&sig2=2O3MPEMoAChrLQvlX99Ewg&bvm=bv.61965928,d.bGE)  **d,b,c,a**  **a,c,b,d**  **c,d,b,a** | | |