--Question Starting--  
Match the following software requirement activities with their primary focus:  
1. Requirement Activities Focus  
I. Eliciting Requirements A. Defining what the system should not do  
II. Developing Use Cases B. Creating visual models to represent system behavior  
III. Requirement Analysis and Modelling C. Identifying user needs and desired system functions  
IV. Requirements Review D. Ensuring completeness and correctness of requirements  
Choose the correct answer from the options given below:  
(1) I-C, II-B, III-A, IV-D  
(2) I-A, II-C, III-B, IV-D  
(3) I-C, II-B, III-D, IV-A  
(4) I-B, II-D, III-C, IV-A  
Answer Key: 3  
Solution:  
• Eliciting Requirements: This process involves discussions, interviews, and analysis to capture the user needs and system functionalities which the system should provide.  
• Developing Use Cases: Use cases are developed to explain and visualize the interactions between users and the system in various scenarios, aiding in understanding system behavior.  
• Requirement Analysis and Modelling: This step involves analyzing gathered requirements and developing models to ensure they are logical, complete, and implementable.  
• Requirements Review: A critical check to validate that all requirements are correctly captured and are feasible as per the system’s scope and limitations.  
Hence, Option (3) is the right answer.  
  
--Question Starting--  
Match the following concepts related to computer graphics with their corresponding techniques or descriptions:  
1. Graphics Concepts Techniques/Descriptions  
I. Line Drawing Algorithms A. Used for drawing circles based on midpoint decision parameters  
II. Mid-Point Circle Algorithm B. Utilized for filling specified areas with a chosen color  
III. Boundary-Fill Algorithm C. Algorithm to efficiently draw lines on raster devices  
IV. Scan Line Polygon Fill Algorithm D. Technique for filling polygons using scan lines  
Choose the correct answer from the options given below:  
(1) I-C, II-A, III-B, IV-D  
(2) I-A, II-C, III-D, IV-B  
(3) I-B, II-D, III-A, IV-C  
(4) I-D, II-B, III-C, IV-A  
Answer Key: 1  
Solution:  
• Line Drawing Algorithms: These algorithms, such as Bresenham’s or DDA, are designed to create straight lines and minimize the distance between the points on the line and the actual line path on raster devices.  
• Mid-Point Circle Algorithm: This algorithm is specifically designed to draw circles by calculating midpoints efficiently and deciding the next pixel based on the decision parameter.  
• Boundary-Fill Algorithm: Typically used in paint programs, this algorithm fills a specified area until a boundary color is encountered.  
• Scan Line Polygon Fill Algorithm: This fills polygons by determining the intersections of the polygon with scan lines and efficiently filling these intersections.  
Hence, Option (1) is the right answer.  
  
--Question Starting--  
Match the following types of cloud services with their primary characteristics:  
1. Cloud Services Characteristics  
I. SaaS A. Provides hardware and network capabilities over the internet  
II. PaaS B. Allows customers to deploy onto the cloud infrastructure consumer-created applications  
III. IaaS C. Delivers software applications over the internet  
IV. Private Cloud D. Ensures security and control by dedicating infrastructure to a single organization  
Choose the correct answer from the options given below:  
(1) I-A, II-C, III-B, IV-D  
(2) I-C, II-B, III-A, IV-D  
(3) I-B, II-D, III-C, IV-A  
(4) I-D, II-A, III-B, IV-C  
Answer Key: 2  
Solution:  
• SaaS: Software as a Service, such as email or customer relationship management (CRM), is directly usable by clients over the internet without installations.  
• PaaS: Platform as a Service provides a platform allowing customers to develop, run, and manage applications without the complexity of building and maintaining the infrastructure.  
• IaaS: Infrastructure as a Service offers virtualized physical computing resources over the Internet, including virtual server space, network connections, and bandwidth.  
• Private Cloud: A cloud environment dedicated to the end user, usually within the user’s firewall and sometimes on-premises.  
Hence, Option (2) is the right answer.  
  
--Question Starting--  
Match the following virtualization concepts with their appropriate descriptions:  
1. Virtualization Concepts Descriptions  
I. Type 1 Hypervisor A. A virtual machine monitor that runs within an operating system  
II. Type 2 Hypervisor B. Provides virtual operating systems and simulates hardware  
III. Full Virtualization C. Runs directly on the host's hardware to control the hardware and manage guest operating systems  
IV. Paravirtualization D. A virtualization technique that does not simulate hardware but instead offers a special API  
Choose the correct answer from the options given below:  
(1) I-C, II-A, III-B, IV-D  
(2) I-B, II-D, III-C, IV-A  
(3) I-A, II-C, III-D, IV-B  
(4) I-D, II-B, III-A, IV-C  
Answer Key: 1  
Solution:  
• Type 1 Hypervisor: This is also known as a bare-metal hypervisor that runs directly on the host's hardware to manage guest operating systems, offering better performance and security.  
• Type 2 Hypervisor: This hypervisor runs within a host operating system and supports guest operating systems above it, typically used for testing and development.  
• Full Virtualization: This method fully simulates the hardware allowing an unmodified guest operating system to be run in isolation.  
• Paravirtualization: Involves a hypervisor that does not simulate all the hardware, where the guest operating system is aware of the hypervisor and interacts more efficiently via an API.  
Hence, Option (1) is the right answer.