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NOIDA INSTITUTE OF ENGINEERING AND TECHNOLOGY, GREATER NOIDA

(An Autonomous Institute Affiliated to AKTU, Lucknow)

BCA

SEM: II - THEORY EXAMINATION (20..... - 20.....)

Subject: Principles of Virtualization

Time: 3 Hours

Max. Marks: 100

General Instructions:

IMP: Verify that you have received the question paper with the correct course, code, branch etc.

1. This Question paper comprises of three Sections -A, B, & C. It consists of Multiple Choice Questions (MCQ's) & Subjective type questions.

2. Maximum marks for each question are indicated on right -hand side of each question.

3. Illustrate your answers with neat sketches wherever necessary.

4. Assume suitable data if necessary.

5. Preferably, write the answers in sequential order.

6. No sheet should be left blank. Any written material after a blank sheet will not be evaluated/checked.

SECTION-A

20

1. Attempt all parts:-

1-a. Example of virtualization type is(CO1,K2)

1

- (a) Application hiding
- (b) Data duplication
- (c) Network Virtualization
- (d) Protocol masking

1-b. Server virtualization is works as..... (CO1,K2)

1

- (a) Better hardware utilization
- (b) Increased hardware costs
- (c) Slower system performance
- (d) Decreased system security

1-c. Virtual machine in virtualization is(CO2,K1)

1

- (a) Software emulation of a physical computer
- (b) Physical hardware device
- (c) Software compiler
- (d) Network router

1-d. Feature of dynamic translation in virtualization (CO2,K1)

1

- (a) Static code execution
- (b) Direct hardware access
- (c) Manual optimization

- (d) Runtime instruction translation
- 1-e. Benefits of WAN virtualization is.....(CO3,K2) 1
- (a) Creates static IP routes
 - (b) Removes need for routing
 - (c) Abstracts physical WAN links
 - (d) Blocks data traffic
- 1-f. What are the use of VLANs in enterprise networks ?(CO3,K1) 1
- (a) Improve scalability and segmentation
 - (b) Add physical routers
 - (c) Disable routing protocols
 - (d) Reduce link speed
- 1-g. Purposes of Power BI table styles (CO4,K2) 1
- (a) Fix row heights
 - (b) Disable editing
 - (c) Enhance table appearance and readability
 - (d) Remove column headers
- 1-h. Choose the Function of focus mode in Power BI for visuals (CO4, K1) 1
- (a) Expand visual for detailed view
 - (b) Delete visual permanently
 - (c) Export visual to Excel
 - (d) Disable tooltips
- 1-i. Security best practice for virtual machines (CO5,K2) 1
- (a) Disable firewalls
 - (b) Use updated security patches
 - (c) Share admin credentials
 - (d) Enable auto-backups only
- 1-j. What is the best time to perform load balancing ? (CO5,K2) 1
- (a) During peak traffic
 - (b) At server boot only
 - (c) Weekly during updates
 - (d) Random intervals
2. Attempt all parts:-
- 2.a. Define storage virtualization with example.(CO1,K2) 2
- 2.b. Write about dynamic translation ..(CO2,K2) 2
- 2.c. Discuss the transport virtualization in a virtual enterprise network?(CO3,K2) 2
- 2.d. Explain the SCSI with Power BI Editor(CO4,K2) 2
- 2.e. Write the importance of Techniques for optimizing in virtual 2

environments(CO5,K2)

SECTION-B

30

3. Answer any five of the following:-

- 3-a. Explain each key concepts of hardware virtualization with example. (CO1,K3) 6
- 3-b. Differentiate the physical and logical partitioning with relevant details.(CO1,K4) 6
- 3-c. Explain the dynamic binary optimization and program behavior with relevant details.(CO2,K2) 6
- 3-d. Define the role of profiling in a dynamic binary optimization system?(CO2,K2) 6
- 3.e. Explain the virtual firewall contexts with relevant details.(CO3,K2) 6
- 3.f. Explain the usage of Condensed Table Reports(CO4,K2) 6
- 3.g. Write the usage of Performance metrics and monitoring(CO5,K2) 6

SECTION-C

50

4. Answer any one of the following:-

- 4-a. Explain the virtualization types also write its importance. (CO1, K2) 10
- 4-b. Explain types of server virtualization and their implications. (CO1, K2) 10

5. Answer any one of the following:-

- 5-a. Explain dynamic binary optimization: framework and its implications.(CO2,K2) 10
- 5-b. Write a discussion on interpreting complex instruction set and its implications.(CO2,K2) 10

6. Answer any one of the following:-

- 6-a. Explain network device virtualization layer 2 and also write its limitations.(CO3,K2) 10
- 6-b. In what ways does network device virtualization allow for hardware resource sharing across multiple logical instances, and what are the practical use cases and limitations of this approach in enterprise networks? (CO3,K2) 10

7. Answer any one of the following:-

- 7-a. Write the comparative analysis on Focus Mode, Totals Computations, Background, Borders with examples.(CO4,K2) 10
- 7-b. In the context of monitoring virtual storage environments, how can general properties such as sizing, dimensions, and visual positions be adjusted in Power BI to optimize the report layout for clarity and usability across multiple device types? (CO4,K3) 10

8. Answer any one of the following:-

- 8-a. Write a discussion on Security challenges in virtual environments with examples(CO5,K3) 10
- 8-b. You're migrating sensitive financial data to a virtualized cloud infrastructure. What security best practices should you implement to protect data in transit and at rest across VMs and virtual networks? (CO5,K2) 10