

Q. P. Code: 11238

(Time: 2 $\frac{1}{2}$ hours)

[Marks: 60]

Please check whether you have got the right question paper.

- N. B.: (1) **All** questions are **compulsory**.
(2) Make **suitable assumptions** wherever necessary and **state the assumptions** made.
(3) Answers to the **same question** must be **written together**.
(4) Numbers to the **right** indicate **marks**.
(5) Draw **neat labeled diagrams** wherever **necessary**.
(6) Use of **Non-programmable** calculator is **allowed**.

Q1 Answer any two of the following:

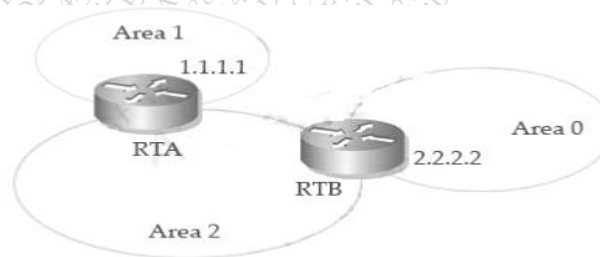
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- Explain the difference between simple split horizon and split horizon with poisoned reverse
- What is load balancing? Explain in detail types of load balancing.
- Explain the following:
i. Summary route ii. Administrative distance iii. Floating static route
- What is routing protocol? What basic procedures should routing algorithm perform? Why do routing protocols use metrics?

Q2 Answer any two of the following:

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- Why DR and BDR are essential? how are they elected? Which type of network supports or does not support the process of DR/BDR election and why?
- Refer to the topology .and explain why 1.1.1.1 is not present in routing update and how would you get the 1.1.1.1 network into the OSPF database?



- Explain the difference between a stub area, a totally stubby area, and a not-so-stubby area.
- Explain the role of LSA 3, LSA 4, LSA 5 in OSPFv2. Who generates it? With whom they are shared? Why?

[TURN OVER]

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Q3 Answer any two of the following:

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- a Explain source-specific multicast and which multicast address ranges are assigned as source-specific multicast destination addresses and are reserved for use by source-specific applications and protocols?
- b Explain IPV6 extension header in detail.
- c Which two orders in the BGP Best Path Selection process are correct? And why?
 - i. Higher local preference, then lowest MED, then eBGP over iBGP paths
 - ii. Higher local preference, then highest weight, then lowest router ID
 - iii. Highest weight, then higher local preference, then shortest AS path
 - iv. Lowest origin type, then higher local preference, then lowest router ID
 - v. Highest weight, then higher local preference, then highest MED
- d Explain the major differences between an IPv4-compatible tunnel and IP6 to IP4 (6to4) tunnel?

Q4 Answer any two of the following:

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- a Explain the building blocks of enterprise campus infrastructure.
- b Loop guard and UnDirectional Link Detection both protect against Layer 2 STP loops. In which ways does loop guard differ from UDLD in loop detection and prevention?
- c What is the need for implementing spanning tree protocol? What are the features of spanning tree protocol?
- d The EtherChannel between your LAN switch and the Internet router is not load-balancing efficiently. On the switch, there are several workstations with valid IP ranges. Which different load-balance algorithms can be used in the switch to optimize this load balancing? Explain.

Q5 Answer any two of the following:

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- a What is SSL? What is its use in virtual private networks?
 - b Explain the SAN protocol stack.
 - c Explain dynamic multipoint virtual private network.
 - d Explain the concept of VSAN and Zoning.
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