**NAVRACHANA UNIVERSITY**
*a UGC recognized University*

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| **School:** | School of Engineering and Technology |
| **Program:** | BTech-Information Technology |
| **Year:** 4th | **Semester:** 7th |
| **Examination:** | End Semester Examination |
| **Examination year:** | December - 2021 |

| **Course Code:** IT408 | **Course Name:** Internet of Things Cloud Platform | |
|---|---|---|
| **Date:** | 09/12/2021 | **Marks:** 40 |
| **Time:** | 11:30 AM to 1:30 PM | **Total Pages:** 1 |

**Instructions for students:**
1. This question paper consists of five main questions with their related sub-questions
2. Write answers for questions belonging to same question/sub-question together. Do not answer questions haphazardly
3. Make assumptions wherever required
4. Manage time effectively during examination so that paper is completed in specified duration

| Q 1. [A] | Attempt the following questions: [1 mark each] | CO | BTL | (5) |
|---|---|---|---|---|
| 1. | _____ VMM uses OS as an intermediary for interacting with hardware. <br> a. Type 1  b. Type 2 <br> c. Type 3  d. Type 4 | CO1 CO2 | 1,2 | 1 |
| 2. | Thingspeak combines _____. <br> a. IoT device  b. End user application <br> c. Analytics  d. All of the above | CO1 CO2 CO3 | 1,2,3 | 1 |
| 3. | Data center network is a part of SDN _____ plane. <br> a. Data  b. Control <br> c. Application  d. All of the above | CO4 | 1,2 | 1 |
| 4. | Which of these is not a part of AWS suite for IoT cloud? <br> a. Big query  b. Greengrass <br> c. IoT Analytics  d. Free RTOS | CO3 | 1,2,3 | 1 |
| 5. | Which of these is an SDN data plane protocol. <br> a. MAC  b. IST <br> c. TCP/UDP  d. All options are correct | CO4 | 1,2 | 1 |
| **Q 1. [B]** | **Define the following terms (Any 5): [1 mark each]** | | | **(5)** |
| 1. | Cloud provider | CO1 CO2 | 1,2 | 1 |
| 2. | Southbound Interfaces | CO4 | 1,2 | 1 |
| 3. | NFV | CO4 | 1,2 | 1 |
| 4. | Hypervisor | CO1 CO2 | 1,2 | 1 |
| 5. | SaaS | CO3 | 1,2 | 1 |
| 6. | REST API | CO3 | 1,2,3 | 1 |
| **Q 2.** | **Short answer questions [Any 5]: [2 marks each]** | | | **(10)** |
| 1. | Explain SDN architecture | CO4 | 1,2 | 2 |
| 2. | What is serverless computing? | CO3 | 1,2,3 | 2 |
| 3. | What is micro-batch analysis? | CO2 CO3 | 1,2,3 | 2 |
| 4. | Explain Cloud Computing reference architecture defined by NIST. | CO3 | 1,2,3 | 2 |
| 5. | Explain different technologies provided by MS Azure for implementing cloud for the IoT. | CO3 | 1,2 | 2 |
| 6. | What is nested flow in terms of OpenFlow? | CO4 | 1,2,3 | 2 |

| Q 3. | Answer in detail [Any 2]: [10 marks each] | | | (20) |
|---|---|---|---|---|
| 1. | Explain any one use-case of Google IaaS. | CO3 | 1,2,3 | 10 |
| 2. | How is co-operation among SDN controllers achieved in a complex domain? Explain in detail. | CO4 | 1,2,3,4 | 10 |
| 3. | Explain any one use-case of Azure PaaS. | CO3 | 1,2,3 | 10 |

-----------------------------------------------End of Question Paper ---------------------------------------------

----------------All the Best---------------------