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| Image result for adamas university logo | **ADAMAS UNIVERSITY**  **END SEMESTER EXAMINATION**  (Academic Session: 2020 – 21) | | |
| **Name of the Program:** | BCA | **Semester:** | I |
| **Paper Title:** | Computer Fundamentals | **Paper Code:** | ECS31163 |
| **Maximum Marks:** | 50 | **Time Duration:** | 3 Hrs |
| **Total No. of Questions:** | 17 | **Total No of Pages:** | 2 |
| *(Any other information for the student may be mentioned here)* | 1. At top sheet, clearly mention Name, Univ. Roll No., Enrolment No., Paper Name & Code, Date of Exam. 2. All parts of a Question should be answered consecutively. Each Answer should start from a fresh page. 3. Assumptions made if any, should be stated clearly at the beginning of your answer. | | |

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| **Group A**  **Answer All the Questions (5 x 1 = 5)** | | | |
| 1 | Name the part of computer system the manage and coordinates the operations of all components of a computer system. | **R** | **CO1** |
| 2 | Demonstrate Octal Number System. | **U** | **CO2** |
| 3 | Illustrate principle of duality with the help of an example. | **U** | **CO3** |
| 4 | Define average access time. | **U** | **CO4** |
| 5 | What is throughput? | **R** | **CO5** |
| **Group B**  **Answer All the Questions (5 x 2 = 10)** | | | |
| 6 a) | i)Who invented the concept of stored program?  ii)Why is the concept of stored program is important? | **R** | **CO1** |
| **(OR)** | | | |
| 6 b) | i)How many types of number systems are there?  ii)What is data processing? | **R** | **CO1** |
| 7 a) | Compare interpreter, compiler and assembler. | **U** | **CO2** |
| **(OR)** | | | |
| 7 b) | Name and explain about the device that is used for converting drawings into digital form. | **U** | **CO2** |
| 8 a) | Why NAND and NOR gates are called Universal gates? | **R** | **CO3** |
| **(OR)** | | | |
| 8 b) | Construct logic circuits for Boolean Expression using basic gates.  (A+B) . (A+C) . (A’+B’) | **Ap** | **CO3** |
| 9 a) | State and prove two basic De Morgan’s theorems. | **U** | **CO4** |
| **(OR)** | | | |
| 9 b) | Express (A’+C) . (A’+B’+C’) . (A+B’) in sum-of-product form. Ensure that each term has all literals. | **U** | **CO4** |
| 10 a) | Demonstrate the concept of multiprogramming and multitasking. | **U** | **CO5** |
| **(OR)** | | | |
| 10 b) | Explain the role of an operating system as the resource manager of a computer system. | **U** | **CO5** |
| **Group C**  **Answer All the Questions (7 x 5 = 35)** | | | |
| 11 a) | i) What is generation in computer terminology? Who is known as father of modern programmable computers?  ii)What is Integrated Circuit? How it helps in reducing the size of computers? | **R** | **CO1** |
| **(OR)** | | | |
| 11 b) | i) Why were first two generation computers being difficult and costlier to produce commercially than computers of subsequent generations?  ii)Compare the advantages of IC technology over transistor technology. | **R** | **CO1** |
| 12 a) | What is an input device? Name some commonly used input devices. |  | **CO2** |
| **(OR)** | | | |
| 12 b) | What are peripherals? Is Optical Character Recognition being a peripheral? Explain. | **U** | **CO2** |
| 13 a) | Subtract 1000112 from 0100102 using complementary method. | **U** | **CO3** |
| **(OR)** | | | |
| 13 b) | Multiply binary numbers 10101 and 01110. | **U** | **CO3** |
| 14 a) | Proof Absorption Law by perfect induction method | **U** | **CO4** |
| **(OR)** | | | |
| 14 b) | Differentiate between the characteristics of primary and secondary storage of a digital computer system. | **U** | **CO4** |
| 15 a) | Relate a system with a digital computer system. |  | **CO4** |
| **(OR)** | | | |
| 15 b) | “An electronic circuit that operates on one or more signals to produce standard output signals”. Illustrate the statement. | **U** | **CO4** |
| 16 a) | Explain batch processing concept. | **U** | **CO5** |
| **(OR)** | | | |
| 16 b) | Explain some parameters to measure efficiency of an operating system. | **U** | **CO5** |
| 17 a) | Name some popular secondary storage devices used in today’s computer system. | **R** | **CO5** |
| **(OR)** | | | |
| 17 b) | Illustrate main limitations of primary storage of a computer system. | **Ap** | **CO5** |