Instruction for submission of Assignment

Each student shall be required to submit two assignments in each theory paper of all programmes where no practical/project work is prescribed. For this purpose, the University administration will set out and provide to each student three different topics in each theory paper; out of which he/she will be required to write out and submit assignment work only on two topics of his/her choice in the answer book provided to him/her for this purpose by the University. Both the assignments, each carrying equal marks, shall be evaluated for the purpose of examination. It is again emphasized that writing of two assignments in each theory paper, where no practical / project work is prescribed, is compulsory and unless it is done and assignment copy submitted to the University on the date of the examination of the theory portion of the concerned paper, the study requirement of the student will not be taken to have been completed and he/she will be declared to have failed. Besides, it has, now, been decided by the University to club the marks obtained by a student in his/her assignment work/project work with the marks obtained by him/her in the written examination of that paper to determine his/her pass percentage in the concerned paper. Hence, it is in student's interest that he/she submits the assignment work in time. Students are also advised to prepare their assignments very carefully and meticulously. They must write assignment in their own handwriting. Assignment answers should not be copied from the learning material supplied by the University or from any other source. Assignments must be submitted in the answer books provided to the students by the University for this purpose. In no case, assignment written in private copy will be accepted by the University. In case of loss of assignment copy, fresh assignment copy may be procured from the University on payment of Rs.200.00 by bank draft. Similarly, Project-Work, wherever prescribed, must also be submitted by the fixed date, failing which the student will be deemed to have failed in the concerned subject.
1. Explain the different types of transmission modes with examples.
2. Differentiate between presentation layer and application layer.
4. What is the purpose of designing ICMP? What are the different query messages in ICMP for network monitoring and management?
5. What are the differences between TCP and UDP? Explain the meaning of the following system calls: (i) read() (ii) recv() (iii) inet() (iv) close().
6. Discuss any two types of sockets. How does the sliding protocol control the flow of packets in the network? Explain with the help of a diagram.
7. Define the term 'software engineering'. Explain all the phases of Waterfall Model
8. Write short notes on: (a) Software crisis (b) Software maintenance (c) Software quality.
9. Explain various software metrics and give example for each type.
10. Using the third order Taylor's series method find the solution of the differential equation: $xy' = x - y$, $y = 2$ at $x = 2$ taking $h = 1$
11. Solve the following IVP's using Euler's method $y' = \frac{y - x}{y + x}$, $y(0) = 1$. Find $y(0.1)$ with $h = 0.1$.
12. $y' = \frac{y - t}{y + t}$, $y(0) = 1$. Find $y(0.5)$ taking $h = 0.5$.
13. What is ambiguity? Explain using at least two different examples.
14. Construct a Turing machine to accept the Sum function given by: $F(m,n) = \{0, \text{if } m=0 \text{ or } n=0, \text{ Else } m+n\}$
15. Prove that following languages are not Regular Languages:
   (a) $L = \{a^n b^n \mid n \geq 1\}$ (b) $L = \{a^p \mid p \text{ is a prime number.}\}$
16. Comment on “Java is a robust programming language? What is the Java virtual machine?
17. What is meant by Serialization? Differentiate between Transient and Volatile keywords.
18. Write a Java program to display a button labeled "Nalanda Open University".
19. Define WAP (Wireless Application Protocol). Explain the layered architecture of WAP.
20. Write the steps for creating a Domain in Windows Server. Discuss the features of Intranet Authoring Tools.
21. Write short notes on: (a) IMAP (b) ARP (c) HTTP (d) JDBC