

BRAINWARE UNIVERSITY

Term End Examination 2023-2024
Programme – M.Sc.(ANCS)-2022
Course Name – Steganography
Course Code - MNCS304A
(Semester III)



Full Marks: 60

Time: 2:30 Hours

[The figure in the margin indicates full marks. Candidates are required to give their answers in their own words as far as practicable.]

Group-A

(Multiple Choice Type Question)

1 x 15=15

- Choose the correct alternative from the following:
- (i) Identifying the following is not an issue in steganography.
 - a) Security

b) Capacity

c) Imperceptibility

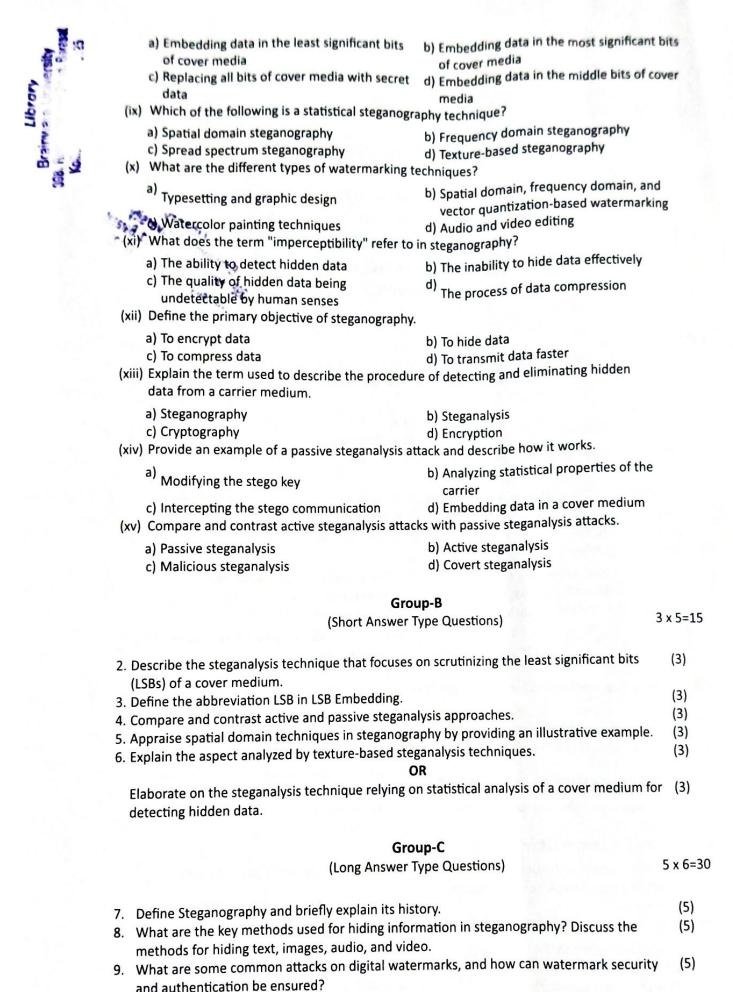
d) Compression

- (ii) What is steganalysis?
 - a) The process of embedding secret data
- b) The analysis of stegosaurus fossils
- c) The detection of hidden data
- d) The creation of secure keys
- (iii) What are the frameworks for secret communication in steganography?
 - a) Secret handshakes

 b) Pure Steganography, secret key, public key steganography

c) Morse code

- d) Public announcements
- (iv) What are steganography algorithms primarily responsible for?
 - a) Sending messages over the internet
- b) Hiding secret keys
- c) Embedding secret data within cover media
- d) Performing complex calculations
- (v) What distinguishes adaptive steganography algorithms from non-adaptive ones?
 - a) Adaptive algorithms are more expensive
- b) Non-adaptive algorithms change their behavior based on data
- Adaptive algorithms adjust to the cover media
- d) Non-adaptive algorithms are always invisible
- (vi) What are substitution systems in steganography?
 - a) Replacing letters with numbers
- b) Replacing data with equivalent data
- c) Replacing entire messages with random characters
- d) Exchanging keys between parties
- (vii) What is the primary focus of spatial domain steganography techniques?
 - a) Manipulating data in the frequency domain.
- b) Altering data in the spatial domain.
- c) Analyzing data statistically.
- d) Creating digital watermarks.
- (viii) What does LSB embedding refer to in steganography?



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| 10. Provide a case study of LSB embedding and LSB Steganalysis using primary sets. Explain how these techniques can be used and detected in practice. 11. Explain the concept of vector quantization-based watermarking in digital watermarking. | the state of | Element PF. PE | |
| riow does it work, and what are its advantages? | (5) | • | |
| 12. What is the role of steganalysis in ensuring the security of information transmission? OR | (5) | | |
| How can the imperceptibility of steganographic changes be maintained while achieving high capacity for hidden messages? | (5) | | |
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