



हिमाचल प्रदेश केन्द्रीय विश्वविद्यालय  
Central University of Himachal Pradesh  
(Established under Central Universities Act 2009)

Examination: End-Term  
Course: Software Testing  
Course Code: MCA-522

Semester: II  
Marks: 60  
Time: 2 Hours

SECTION – A (सेक्शन-ए) (10X1=10 Marks)

1. Answer all the following questions with ONE mark each.

- Function Point = -----\*-----.
- For a function of  $n$  variables, boundary value analysis yields ---- test cases.
- Software mistakes during coding are known as -----.
- Why should we test a software?
- COCOMO Model is not applied to the following mode  
i. Organic ii. Inorganic iii. Semidetached IV. Embedded
- Function point analysis (FPA) method decomposes the system into functional units. The total number of functional units are  
i. 2 ii. 5 iii. 4 iv. 1
- After the finalization of SRS, we may like to estimate  
i. Size iii. Cost  
ii. Development time iv. All of the above.
- Write the formula for Cyclomatic Complexity.
- Define Software Maintenance.
- Write the formula for basic COCOMO Model.

SECTION – B (सेक्शन - बी) (4x5= 20 Marks)

(Short Answer Questions)(लघु उत्तरीय प्रश्न)

Answer any 4 out of the following 6 questions. Each question carries FIVE marks.

- What are the properties and methods for calculating Cyclomatic complexity? Explain with suitable example.
- An application has the 10 low external inputs, 12 high external outputs, 20 low internal logical files, 15 high external interface files, 12 average external inquiries, and a value of complexity adjustment factor of 1.10. What are the unadjusted and adjusted function point counts?

- What are various kinds of functional testing? Describe any one in detail.
- What is software quality? Discuss software quality attributes.
- What are various kinds of ~~functional~~ testing? Describe any one in detail.
- Some people feel that “maintenance is manageable”. What is your opinion about this issue?

SECTION – C (सेक्शन – सी) (4x7.5= 30 Marks)  
(Long Answer Type Questions)

Answer any 4 out of the following 6 questions. Each question carries 15 marks.

- Consider a project with the following functional units:  
Number of user inputs = 50, Number of user outputs = 40  
Number of user enquiries = 35, Number of user files = 06  
Number of external interfaces = 04, Assume all complexity adjustment factors and weighting factors are average. Compute the function points for the project.
- Explain with example Basic Constructive Cost model (COCOMO).
- Write the name of activities involved during software project planning and explain with suitable example.
- A project size of 200 KLOC is to be developed. Software development team has average experience on similar type of projects. The project schedule is not very tight. Calculate the effort, development time, average staff size and productivity of the project with the help of following table.

Software Project	$a_b$	$b_b$	$c_b$	$d_b$
Organic	2.4	1.05	2.5	0.38
Semidetached	3.0	1.12	2.5	0.35
Embedded	3.6	1.20	2.5	0.32

- Discuss the Risk Management Activities involved during software development in details.
- Briefly discuss the following  
(i) Test case design, Test & Test suite  
(ii) Verification & Validation  
(iii) Alpha, beta & acceptance testing

End of the Question Paper