(Time: 2½ Hours) [Total Marks: 75]

N.B.   1) All questions are compulsory.

2) Figures to the right indicate marks.

3) Illustrations, in-depth answers and diagrams will be appreciated.

4) Mixing of sub-questions is not allowed.

Q. 1   **Attempt All (Each of 5Marks)** (15M)

(a)   **Multiple Choice Questions**

i.   Public domain software are those software which are available in public domain and there is ……………………..

a.   Copyright   b. no patent   c. no trademark   d. no license

ii.   GDB stands for …………………………………………..

a.   GNU Debugger   b. GNU Database

c.   GNU Developer   d. GNU Design

iii.   GPL stands for ………………………………………………

a.   General Public License   b. Global Public License

c.   GNU Public License   d. GNU Permissive License

iv.   Google Talkis an example of ………………………...

a.   Free software   b. Licensed software

c.   Shareware software   d. Proprietary software

v.   Windows NT isa licensed operating system based on……………..

a.   Microsoft   b. Solarisc. IBM   d. Sun Microsystems

(b)   **Fill in the blanks**
(Opens source python IDE,open source initiative,Linux, Web sites,Mozilla thunderbird, Internet explorer, Sun Microsystems IDE for java, open system interchange, Android, Chrome, operating system software)

i.   Eclipse is _____software.

ii.   OSI with regards to opens source software stand for_____.

iii.   _____ operating is free open system for PC.

iv.   Wordpress is free, open source software used to create and manage various types of_____

v.   _____is free and open source web browser developed by Mozilla foundation.

(c)   **Write Answers in two lines.**

i.   What is Free BSD?

ii.   What is shared source?

iii.   Define the term "free software"

iv.   What is "patent" in open source development?

v.   What is containerization?

Q. 2   Attempt the following (Any THREE)(Each of 5Marks)   **(15M)**
(a)   Compare and contrast Open source vs. closed source.
(b)   Explain the concept of Marginal Cost and Zero Marginal Cost with regards to FOSS.
(c)   Write short note on Open source ethics.
(d)   Define license? How does license apply to works in public domain? Explain.
(e)   Write a note on the following:
       i.   Apache license   ii. LGPL license
(f)   Give the importance of open source in government.

Q. 3   Attempt the following (Any THREE) (Each of 5Marks)   **(15M)**
(a)   Discuss Apache Web server case study in detail.
(b)   Differentiate between Commercial design practice and Free design practice.
(c)   Write a note on GitHub.
(d)   Define Open source hardware. How hardware can be 'Open'?
(e)   What is Wikipedia? How to contribute into it? Explain.
(f)   Explain the following points in Open source teaching:-
       i.   Meaning
       ii.   What are Learning Objects?
       iii.   Where do the Learning objects come from?

Q. 4   Attempt the following (Any THREE) (Each of 5Marks)   **(15M)**
(a)   What is Android Operating system? Discuss.
(b)   Write a short note on LAMP.
(c)   Explain in detail the concept of Virtualization.
(d)   Discuss in detail any two Open source database technologies.
(e)   Define the terms: - IDEs, Development Tools, Docker, and Programming Language. Give examples.
(f)   What is Linux operating system? Explain its features.

Q. 5   Attempt the following (Any THREE) (Each of 5Marks)   **(15M)**
(a)   Explain Shared software and Shared source.
(b)   Write a note on Open source media.
(c)   Distinguish between Copyright and Copyleft.
(d)   With the help of diagram, explain open source methodology.
(e)   Define software freedom. What are four degrees of freedoms for Free software?

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