Section-1 (Each 2-mark, 6 X 2 = 12)

1. **Give the command that will create a read-only file in your home directory**
   Answer:
   touch a (This creates a file), chmod 0544 a (This will change the permission to read for group and others)

2. **How to find which kernel version your system is running**
   a. uname –r
   b. uname –s
   c. uname -n
   d. None of the above (Correct)

3. **What is the output of echo \\\$SHELL**
   a. \$SHELL (Correct)
   b. /bin/bash
   c. \\$SHELL
   d. \\/bin/bash

4. **How to copy one directory named "a" to another directory named "b”**
   a. cp a b
   b. copy -R a b
   c. cp -R a b (Correct)
   d. None of the above

5. **Display only the duplicate lines in a file with the count**
   a. uniq <file_name> | count -c
   b. sort <file_name> | uniq –Dc
   c. sort <file_name> | uniq -dc (Correct)
   d. None of the above

6. **Set PATH variable in such a way that whenever a user types a command, it has to be executed first from /home/test/my_commands/ (if the command is available in that directory). Else, it has to be executed from the default path. How to achieve that?**
   Answer:
   export PATH="/home/test/my_commands/:$PATH"
   or
   go to the above-mentioned directory and give the command
   export PATH="`pwd`:$PATH"

Section-2 (Each 3-mark, 17 X 3 = 51)

7. **Choose the right option to create hardlink for file a?**
   a. ln -a ahard
   b. ln a hard
   c. ln a ahard (Correct)
   d. None of the above
   e. All of the above

8. **State if the statement is true of false - "The inode of the normal file and its hardlink file are same if we delete the original file then the hardlink file is available with the same content of the original file"**
   a. True (Correct answer)
   b. False

9. **State if true or false - "In case of softlink if we delete the original file then the soft link also gets deleted"**
   a. True

b. False (Correct answer)

10. **Choose options that is valid file system in Linux**
    a. NTFS (Correct)
    b. FAT32(Correct)
    c. Ext2(Correct)
    d. Ext3(Correct)
    e. JFC
    f. XSF
    g. Ext4(Correct)
    h. ETC
    i. Explorer

11. **Select correct statements about Inode**
    a. Inode is unique id of a file (Correct)
    b. Inode is mutable
    c. Inode contain the axillary information about the files (Correct)
    d. Inode stores the information about location in memory where content of the files are stores in the memory (Correct)
    e. Inode stores how many blocks for each file (Correct)
    f. Inode stores the owner of the file (Correct)
    g. Inode stores the count of hardlink and softlink of a file
    h. Inode contains the name of the file

12. **State if the statement is true of false - "In Unix while partitioning the hard disk it allocates memory space for store the inode"**
    a. True (Correct answer)
    b. False

13. **State if the statement is true or false - "In Unix each inode contain 12 pointers in that the first 10 pointers are direct pointers that is each pointer points the one data-block of a file directly"**
    a. True
    b. False (Correct answer)

14. **What is 11th pointer of Inode used for? (Text question)**
    Answer:
    This pointer pointing the data-block which also contain pointers that pointers are pointing the actual data blocks of the file content. For example, our block size is 1024

15. **Maximum file size at 11th pointer level is**
    a. (1 * 512* 1024) => 524288 bytes
    b. (1 * 256 * 1024) => 262144 bytes (Correct answer)
    c. (1 * 256 * 512) => 131072 bytes
    d. (1 * 256 * 1024) => 252144 bytes

16. **What is 12th pointer used for?**
Answer:
This pointer pointing the datablock which contain the pointers
then that pointer pointing the datablock which also contain pointers
then that pointers pointing the datablock which contain the actual
data of the file

17. **Maximum file size at 12th pointer level is**
    a. (1 * 256 * 256 * 1024) => 67108864 bytes (Correct answer)
    b. (2 * 256 * 256 * 1024) => 68108864 bytes
    c. (1 * 256 * 512 * 1024) => 69108864 bytes
    d. (1 * 256 * 256 * 256) => 67108764 bytes

18. State if true or false - "13th pointer is used for three level indirection"

a. True (Correct answer)
b. False

19. Given umask as 0222, what will be the permission for the files created

a. 444 (Correct answer)
b. 222
c. 666
d. None of the above

20. State if true or false - "When I create a directory, the size of the directory is 4096. When I create a 10 MB files inside the directory, still the size of the directory is 5096"

a. True
b. False (correct answer)

21. Which of the following command keep a process running even after you logout from your shell?

a. &
b. Nohup (Correct answer)
c. bg
d. hup

22. Choose the appropriate command to run "ls –lrt" in background

a. nohup ls –lrt &
b. ls –lrt &
c. Both of the a and b (correct)
d. None of the above

Section-3 (Each 5 mark, 6 X 5 = 30 Mark)

23. Consider a file text.text that contains following

ls1.txt
a.html
b.enc
ls1.2.txt

Now write a single command (do not combine multiple commands) that will give following output

txt
html
enc
2.txt

Answer:

```
cut -d"." -f2,3 test.txt
```

24. This is a text question. Explain what will following command do

find /home/ -type f -exec ls -l {} \; | tr -s ' '| sort -nrt' ' -k5 | head -n5

Answer:

List top 5 biggest files from the home directory

25. This is a text question. Explain what will following command do

find /home -type f -size +10M -exec rm -f {} \;

Answer:

It will remove all files that are above 10MB

26. **Give the command that will List out all the commands run between 12:00:00 to 19:00:00 on 2015-01-05 in the given file, The delimiter for date can be / also, like 2015/01/05, the delimiter for the time can also be - like, 12-00-00.**
    a. grep "2015[-/]01[-/]05 1[2-9][-:][0-9][0-9][-:][0-9][0-9]" history.txt (Correct)
    b. grep "2015[-/]10[-/]05 1[2-9][-:][0-9][0-9][-:][0-9][0-9]" history.txt
    c. grep "2015[-/]01[-/]05 1[3-9][-:][0-9][0-9][-:][0-9][0-9]" history.txt
    d. None of the above

27. **Using find command, give the command to locate file which has the name help.c or HELP.c or Help.c + case insensitive search in the file name, not in the extension. For example, it should show Help.c, HELP.c, HeLp.c but should not show HELP.C**
    a. find -type f -iname "help.c" -a -name "*.c" (Correct)
    b. find -type f -iname "help.c" -b -name "*.c"
    c. find -type c -iname "help.c" -a -name "*.c"
    d. Both a & c

28. **On 8:00PM every day from Monday to Friday, store the count of number of .c files in your home directory recursively. Write the crontab entry for that?**
    a. 00 20 * * 2-6 find /home/ -type f -name "*.c" | wc -l > c_count (Correct)
    b. 00 20 * * 1-5 find /home/ -type f -name "*.c" | wc -l > c_count
    c. 00 20 * * 0-5 find /home/ -type f -name "*.c" | wc -l > c_count
    d. None of the above