

- Note: 1) All questions carry equal marks and are compulsory.  
 2) Figures to the right indicate maximum marks for a question.

- Q1. (A) Attempt any **two** sub-questions from (a), (b),(c) in MS-EXCEL (2)  
 (True/False)  
 (a) Today () function is to get the current system date.  
 (b) We cannot rename a worksheet in a workbook.  
 (c) Sorting can be done only in the ascending order.
- (B) Attempt any **two** sub-questions from (d), (e),(f) in MySQL (2)  
 (Multiple Choice)  
 (d) To make the changes in the data already entered in the table we use-----.  
 1) Alter Table 2) Use 3) Select 4) Update & Set  
 (e) To save the transaction we use-----.  
 1) Commit 2) Rollback  
 3) Select 4) Cancel  
 (f) In MySQL, the operator LIKE "A%" finds match for a string-----.  
 1) Starting with A 2) ending with A 3) mixing with % .  
 4) Containing A.
- (C) Attempt any **six** sub-questions from (g),(h),(i),(j),(k),(l),(m),(n),(o) (6)  
 in Data Communications, Networking and Internet. (True/False).  
 (g) Only three topologies are used in networking.  
 (h) Co-axial cable is the fastest media for data transmission.  
 (i) A hub joins multiple computers together to form a single network segment.  
 (j) In a client server based network individual computers or nodes share the processing and storage of data with the server.  
 (k) Wireless connection uses radio and infrared signals.  
 (l) ISP stands for International Service Provider.  
 (m) There are 7 layers in OSI model.  
 (n) A blog is a digital dairy.  
 (o) Search engines are also known as web crawlers or spiders.
- (D) Attempt any **five** sub-questions from (p),(q),(r),(s),(t),(u),(v),(w) (5)  
 in Data Communications, Networking and Internet. (Multiple Choice)  
 (p) ----- is not fundamental characteristics of data communication.  
 1)Timeliness 2) delivery 3) Message 4) Accuracy  
 (q) The base of hexadecimal system is -----.  
 1) 2 2) 4 3) 8 4)16  
 (r) LED is used a source of light in ----- transmission media.  
 1)Twisted pair 2) co-axial cable 3)microwave 4) optical fibre



- (d) There exists a table called COLLEGE having the following columns Roll Number (RNO, integer), Students Name (SNAME, character width 15), Fees Paid (FEES, having 6 integers and 2 decimal places) and Date of Admission(DA, date).  
Write MySQL statements for the following.
- i) Display the structure of the table COLLEGE.
  - ii) Add a new column Conformation (CO, Boolean).
  - iii) Increase the fees of all students by 500.
  - iv) For roll number 75, change the name of the student to 'Rajesh Pal'.
  - v) Change the size of the column FEES to 5 integers and 2 decimals.
  - vi) Rename the column DA to DOB.
  - vii) Delete the table COLLEGE.

Q4. (A) Answer **any one** sub-question from (a) , (b) in MySQL (8)

- (a) There exists a table CUSTOMER having the columns Customer Number (CNO, integer), Customer's Name (CNAME, character), Bill NUMBER (BNO, integer, primary key), Bill Amount (BAMT, integer) and Date of Purchase (PURDT, date).  
Write MySQL statements for the following.
- i) Display Customer Number, Customer's name and Bill Amount from this table.
  - ii) Display Customer Number, Customer's Name and Bill Amount where Bill Amount is more than the average Bill Amount.
  - iii) Display Date of Purchase, maximum and minimum Bill Amount grouped by Date of Purchase.
  - iv) Display Customer Number, Customer's Name and Bill Amount where the Bill Amount is equal to the Highest Bill Amount.
  - v) Display all the rows from this table where Customer's name contains 'A'.

Q4. (B) Answer **any one** sub-question from (c) , (d) in MySQL (7)

- (c) There exists a table CASH containing columns Bank Account Number (BAN, integer), Name of the depositor (DNAME, character), City (CITY, Character), Amount deposited (DEP, numeric) and Date of Deposit (DEPDT, date). Write MySQL queries for the following.
- i) Display the City, maximum amounts deposited and the average amounts deposited grouped as per City.
  - ii) Display the City, total number of amounts deposited and minimum amounts deposited grouped as per city.
  - iii) Display all the rows where the Amount deposited is above the average Amount deposited.
  - iv) Display all the rows from this table where the Bank account Number is divisible by 5.

- (d) There exists a table NCAR containing columns Registration Number (REGNO, character), Model of the car (MAKE, character), Date of Purchase (DOP, date) and Value of the car (Value, numeric).  
Write MySQL queries for the following.
- i) Display all the rows from this table where Value is above 750000.
  - ii) Display all the rows from this table where Make is "HONDA".
  - iii) Display the Model of the car labeled as 'Make of the Car' and Value of the car labeled as 'Price of the Car' from this table.
  - iv) Display the Registration Number, Model of the car and Value of the car purchased before March 11, 2005 from this table.
  - v) Display the Registration Number, Model of the car and Value of the car where Model of the car 'MARUTI' from this table.
  - vi) Display all the rows from this table in the descending order of Value.
  - vii) Display all the rows from this table where the first letter in the Model of the car is 'F'.

Q5. (A) Answer **any one** sub-question from (a) , (b) in MS-EXCEL (8)

- (a) For the following spreadsheet obtain the Subtotals of the Salary Designation wise.

	A	B	C	D	E
1	NAME	DEPARTMENT	AGE	DESIGNATION	SALARY
2	SALIM	HR	30	MANAGER	45000
3	ANANT	ACCOUNTS	23	CLERK	20000
4	RAHUL	HR	21	CLERK	25000
5	AANA	ACCOUNTS	29	MANAGER	50000
6	RAJNI	ACCOUNTS	24	CLERK	20000
7	ASHA	IT	30	MANAGER	35000

- (b) For the following worksheet

	A	B	C	D
1	YEAR	SIMPLE INTEREST	COUMPOUND INTEREST	DIFFERENCE
2	1			
3	2			
4	3			
5	4			
6	5			
7	6			
8	AMOUNT	500000		
9	RATE	9%		

Write the steps in MS-EXCEL to obtain

- i) SIMPLE INTEREST in column B where simple interest=  $P*N*R/100$

- ii) COMPOUND INTEREST in column C where compound interest =  $P \times (1 + R/100)^N - P$ . Where P is AMOUNT, R is RATE and N is YEARS.
- iii) DIFFERENCE = COMPOUND INTEREST - SIMPLE INTEREST in column D.

Q5. (B) Answer **any one** sub-question from (c) , (d) in MS-EXCEL (7)

(c) Consider the following worksheet showing the Sales of 5 persons.

	A	B	C	D	E	F
1	NAME	SALES	COMMISSION	DISCOUNT	NET	TAX
2	ASIF	45000				
3	REHANA	60000				
4	SALMAN	25000				
5	ANWAR	70000				
6	AAMIR	20000				

Write steps to find for all the salesmen

- (i) Commission as 6% of the Sales or 5000 whichever is more in column C.
- (ii) Discount as 12% of the Sales or 4000 whichever is less in column D.
- (iii) Net as Sales- Commission – Discount in column E.
- (iv) Tax as 10% of Net in column F.

(d) Explain the following built in functions in MS-EXCEL

- 1. IPMT()
- 2. INT()
- 3. RATE()
- 4. MAX()
- 5. FLOOR()
- 6. NPER()
- 7. ROUND()

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Note: 1) All questions carry equal marks and are compulsory.

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- Q1. (A) Attempt any **two** sub-questions from (a), (b),(c) in MS-EXCEL (2)  
 (True/False)  
 (a) Today () function is to get the current system date. **T**  
 (b) We cannot rename a worksheet in a workbook. **F**  
 (c) Sorting can be done only in the ascending order. **F**
- (B) Attempt any **two** sub-questions from (d), (e),(f) in MySQL (2)  
 (Multiple Choice)  
 (d) To make the changes in the data already entered in the table we use-----.  
 1)Alter Table 2) Use 3) Select **4) Update & Set**  
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 in Data Communications, Networking and Internet. (True/False).  
 (g) Only three topologies are used in networking. **F**  
 (h) Co-axial cable is the fastest media for data transmission. **F**  
 (i) A hub joins multiple computers together to form a single network segment. **T**  
 (j) In a client server based network individual computers or nodes share the **T**  
 processing and storage of data with the server.  
 (k) Wireless connection uses radio and infrared signals. **T**  
 (l) ISP stands for International Service Provider. **F**  
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 (q) The base of hexadecimal system is -----.  
 1) 2 2) 4 3) 8 **4)16**  
 (r) LED is used a source of light in ----- transmission media.  
 1)Twisted pair 2) co-axial cable 3)microwave 4) **optical fibre**  
 (s) It is easy to add or remove nodes in ----- topology.



5. Star network is frequently used in a LAN to connect several microcomputers to a central unit that works as a communications controller.
6. This topology is useful if it is required to keep a centralized database.

### **RING TOPOLOGY**

**(give full 2 marks if any 2 points are explained)**

1. In a ring topology, all the nodes are connected to each other in such a way that they make a closed loop.
2. In a ring topology, each device has a dedicated point-to-point connection with only two devices on either side of it, thus forming a ring structure.
3. In this topology, each node examines data that is sent through the ring. If the data is not addressed to the node examining it, that node passes the data to the next node in the ring. Thus the data travels in only one direction.
4. Sending and receiving of data takes place by the help of TOKEN.

(b) Explain any three transmission media.

**( If any 3 types are mentioned give 3 marks, if also explained give full marks )**

#### **Twisted-Pair Cable:**

1. It normally consists of four pairs of wire, each pair has two insulated copper wire approximately 1mm thick twisted around each other to neutralize induced signals.
2. It can be used for both analog and digital transmission.
3. One of the wires is used to carry signals to the receiver and the other is used only as a ground reference. The receiver uses the difference between this two.
4. Twisted-pair technology avoids mixing of signals (cross talk).
5. Twisted pair cables are used in telephone lines to provide voice and data channels.
6. Local Area Network also uses Twisted-pair cable.

#### **Coaxial Cable:**

1. Coaxial cable (coax) has a central core conductor of solid copper wire which is surrounded by an insulating material which is in turn enclosed in an outer conductor of metal foil, braid or a combination of the two. The outer metallic wrapping serves as a shield against noise and as the second conductor, which completes the circuit. The outer conductor is also enclosed in an insulating sheath and the whole cable is protected by a plastic cover.
2. It can be used for both analog and digital transmission.
3. It is widely used in cable TV and in LAN.
4. Coaxial cables are of two types: thick and thin. Thick is the older standard and is rarely used in new networks.

#### **Fibre-Optic Cable:**

1. A Fibre-optic cable is a thin strand of glass that transmits pulsating beams of light. When one end of the strand is exposed to light, the strand carries the light all the way to the other end-bending around corners with only a minute loss of energy. The light source may be a laser light or a light emitting diode (LED).

2. It can be installed over long distances.
3. The use of Fiber-optic media in a network prevents EMI and RFI from damaging the data signals.
4. It is resistant to the effect of lightning.
5. It also supports a higher bandwidth.
6. It provides better security.
7. No corrosion
8. Faster transmission rate.

### Wireless

1. Wireless communication uses radio frequencies or infrared (IR) waves to transmit data between devices.
2. It allows a person with a Wi-Fi device, such as a laptop, mobile phone to connect to the internet via access points.
3. It is useful for business travelers as well as at home. A wireless router can connect a group of Wi-Fi enabled devices to an adjacent wired network to establish home network.
4. Most mobile telephone operators offer Internet access through mobile phones. It provides access to internet 24 by 7 and in outdoor areas.

(B) Answer **any one** sub-question from (c), (d) in Data Communications, Networking and Internet. (7)

(c) What are the different types of accounts available to connect to the internet?

**( If any 3 types are mentioned give 3 marks, if also explained give full marks)**

Types of internet connections are

- 1) Dial-up Access. 2) Direct or Dedicated Access. 3) Cable Internet.
- 4) DSL Broadband Internet. 5) ISDN connection 6) Wireless Internet

#### 1) Dial-up Access:

In this type of connection a modem and regular telephone line is used to dial the number of the service provider and after giving the user name and password a connection is established. As long as the internet is being used the phone line will remain busy. This method is not much in use today as it has slower speeds. There were two type a) Shell account:-One can view only text-based information b) TCP/IP link: It provided graphical interface and hence was user friendly.

#### 2) Direct or Dedicated Access:

In this type of internet access a dedicated leased line is provided by a ISP (Internet Service Provider) to the network of a organization. It is used by large organizations who have many employees all of whom have to be provided with an internet connection having some decent speed. It is expensive and difficult to setup and so organizations use this method.

Advantages: 1) Fast speed. 2) Better reliability.

Disadvantages: 1) Very expensive 2) Difficult to setup (install).

#### 3) Cable Internet:

This internet connection is given by cable TV operators through the same cable that brings the TV signals to your home. Some of the providers are Hathway, Incable etc. They have different plans which include the unlimited internet connection at varying speeds.

Advantages: 1) Good connection speeds 2) Always connected 3) Easy to set up.

Disadvantages: 1) Bandwidth is shared with over same cable. 2) Cost tied up with cable TV charges.

**4) DSL (Digital Subscriber Line) Broad Band Internet.**

This is the most common type of internet account in use today. This technology provides digital data transmission over the telephone network and is very popular. Here a faster internet connection is given which allows simultaneous audio and video connections at good speeds. Most DSL Internet providers offer ADSL (Asymmetric Digital Subscriber Line), in which the speeds of download is faster than upload. It transfers data from the Computer to the phone line via a DSL modem. Various service providers offer this type of account e.g. MTNL, Tata etc.

**5) ISDN (Integrated Service Digital Network) Internet Account.**

This is one of the oldest broadband digital access methods to access the internet. It is provided by the telephone service provider. It has very high transmission speeds which remain constant unlike broad band. Initial set up costs of hardware and usage charges are very high for ISDN account. This type of account is now not commonly used as a cheaper and fast DSL is available.

**6) Wireless Internet.**

This is the newest type of broadband internet connection which uses wireless radio frequency bands and does not use telephone or cable networks. It provides a connection which is always on which can be used even when on the move i.e. from anywhere provided you are in the network coverage area.

(d) Explain cybercrime in brief.

**CYBER CRIMES:**

The information stored in the computer files is more valuable than the computer itself. This is because these information's are very important and unique. The damage to these file may cause irrecoverable loss to the organization. Now the popularity of networks has made the issue of security more critical because messages need to be authorized and confidential data needs to be protected from unauthorized access. The phenomenal growth of Internet has increased computer crimes. Computer users live in an electronic frontier called cyberspace, where data is stored, processed, and moved through vast data communications networks. Cyberspace is a technological, cultural, and economic frontier that is growing all around us and it will continue to grow. Cyberspace presents many challenges and opportunities to computer users, corporate data professionals and others who make their living. A new generation of crimes has cropped up by the advent of Internet. A Computer crime, or Cybercrime, refers to any crime that involves a computer and a network. Computer hacking, software piracy, Internet pedophilia, password breaking, spoofing, telecommunication frauds, spamming and the availability of illicit or unlicensed products and services are offences that have already made their mark. New problems emerging on the scene include credit card fraud, cyber terrorism and criminal use of secure Internet communications. Activity crossing international borders and involving the interests of at least one nation state is sometimes referred to as cyber warfare. Computer crime encompasses a broad range of activities. Generally, however, it may be divided into two categories: (1) crimes that target computers directly; (2) crimes facilitated by computer networks or devices, the primary target of which is independent of the computer network or device.

Q3. (A) Answer **any one** sub-question from (a) , (b) in MySQL (8)

- (a) Write MySQL statement to create a table called OFFICE having the columns Employee Number (ENO, integer, primary key), Employee Name (ENAME, character with variable width 20 columns, should not be empty), Gender (GEN, character with width 1, default value as "M") and Date of joining ( DOJ, date).

**CREATE TABLE OFFICE** **1 Mark**  
**(ENO SMALLINT PRIMARY KEY,** **2 Marks**  
**ENAME VARCHAR(20) NOT NULL,** **2 Marks**  
**GEN CHAR(1) DEFAULT 'M',** **2 Marks**  
**DOJ DATE);** **1 Mark**

- (b) Write MySQL statement to create a table called HOTEL having the columns Customer's Name (CNAME, character with variable width 20 columns, primary key), Customer's Address(CADDR, character with fixed width 50, not empty), Room Number(RNO, integer), Type of Room( TYPE, character of width 10, which contains default entry as "NON AC").

**CREATE TABLE HOTEL** **1 Mark**  
**(CNAME VARCHAR(20) PRIMARY KEY,** **2 Marks**  
**CADDR CHAR(50) NOT NULL,** **2 Marks**  
**RNO SMALLINT,** **1 Mark**  
**TYPE CHAR(10) DEFAULT 'NON AC');** **2 Marks**

(B) Answer **any one** sub-question from (c) , (d) in MySQL (7)

- (c) Explain the following built-in functions in MySQL.

1)LENGTH ( )      2)LTRIM( )      3) MID( )      4) TIME( )  
5) DAY( )      6) MONTHNAME( )      7) ABS( )

**GIVE 1 MARK EACH if definition or syntax or example is correct (Total 7)**

**1. LENGTH ( ):** Returns the length of the given string.

e.g. SELECT LENGTH('India'); gives 5.

**2. RTRIM ( ):** Syntax: **RIGHT(str, n)**

Returns the rightmost n characters from the string. If n is zero or negative then empty string is returned.

e.g. SELECT RIGHT ('COLLEGE', 4); gives LEGE.

**3. MID ( ):** Syntax: **MID(str, pos, n)**

Returns a substring of n characters starting with the position pos from the string str: i.e. it gives the required number of characters from a given position.

E.,g. SELECT MID('MANJULA',4,2); gives JU

**4. TIME ( ):** Extracts the time from a date time expression.

e.g. SELECT TIME('2015-10-15 14:23:10'); gives 14:23:10

**5. DAY( ):** Returns the day of the month for the date, as a number from 1 to 31. e.g:  
Select DAY('2018-05-21'); gives 21

**6. MONTHNAME ( ):** Returns the name of the month form the date.

SELECT DAYNAME('2014-11-24'); gives NOVEMBER

**7. ABS(X):** Returns the absolute value of x.

SELECT ABS(-56); gives 56

- (d) There exists a table called COLLEGE having the following columns Roll Number (RNO, integer), Students Name (SNAME, character width 15), Fees Paid (FEES, having 6 integers and 2 decimal places) and Date of Admission (DA, date).  
Write MySQL statements for the following. **(1 Mark each)**
- i) Display the structure of the table COLLEGE.  
**DESC COLLEGE;**
  - ii) Add a new column Conformation (CO, Boolean).  
**ALTER TABLE COLLEGE  
ADD CO BOOLEAN;**
  - iii) Increase the fees of all students by 500.  
**UPDATE COLLEGE  
SET FEES=FEES+500;**
  - iv) For roll number 75, change the name of the student to 'Rajesh Pal'.  
**UPDATE COLLEGE  
SET SNAME='Rajesh Pal' WHERE RNO=75;**
  - v) Change the size of the column FEES to 5 integers and 2 decimals.  
**ALTER TABLE COLLEGE  
MODIFY FEES DECIMAL(7,2);**
  - vi) Rename the column DA to DOB.  
**ALTER TABLE SALARY  
CHANGE DA DOB DATE;**
  - vii) Delete the table COLLEGE.  
**DROP TABLE COLLEGE;**

- Q4. (A) Answer *any one* sub-question from (a) , (b) in MySQL **(8)**
- (a) There exists a table CUSTOMER having the columns Customer Number (CNO, integer), Customer's Name (CNAME, character), Bill NUMBER (BNO, integer, primary key), Bill Amount (BAMT, integer) and Date of Purchase (PURDT, date).  
Write MySQL statements for the following.
- i) Display Customer Number, Customer's name and Bill Amount from this table.  
**SELECT CNO,CNAME,BAMT** **1 Mark**  
**FROM CUSTOMER;**
  - ii) Display Customer Number, Customer's Name and Bill Amount where Bill Amount is more than the average Bill Amount.  
**SELECT CNO,CNAME, BAMT** **2 Marks**  
**FROM CUSTOMER  
WHERE BAMT > (SELECT AVG(BAMT)FROM CUSTOMER);**
  - iii) Display Date of Purchase, maximum and minimum Bill Amount grouped by Date of Purchase. **2 Marks**  
**SELECT PURDT, MAX(BAMT),MIN(BAMT)  
FROM CUSTOMER  
GROUP BY PURDT;**
  - iv) Display Customer Number, Customer's Name and Bill Amount where the Bill Amount is equal to the Highest Bill Amount. **2 Marks**  
**SELECT CNO,CNAME, BAMT** **2 Marks**  
**FROM CUSTOMER  
WHERE BAMT=(SELECT MAX(BAMT)FROM CUSTOMER);**

v) Display all the rows from this table where Customer's name contains 'A'.

**SELECT \***  
**FROM CUSTOMER**  
**WHERE CNAME LIKE "%A%";** **1 Mark**

Q4 (A) (b) **PLEASE NOTE THIS SUB QUESTION IS MISSING HENCE ANY STUDENT WHO ATTEMPTS QUESTION 4 (A) SHOULD BE GIVEN FULL 8 (EIGHT) MARKS.**

Q4. (B) Answer *any one* sub-question from (c) , (d) in MySQL (7)

(c) There exists a table CASH containing columns Bank Account Number (BAN, integer), Name of the depositor (DNAME, character), City (CITY, Character), Amount deposited (DEP, numeric) and Date of Deposit (DEPDT, date). Write MySQL queries for the following.

i) Display the City, maximum amounts deposited and the average amounts deposited grouped as per City. **2 Marks**

**SELECT CITY, MAX(DEP),AVG(DEP)**  
**FROM CASH**  
**GROUP BY CITY;**

ii) Display the City, total number of amounts deposited and minimum amounts deposited grouped as per city. **2 Marks**

**SELECT CITY, COUNT(\*),MIN(DEP)**  
**FROM CASH**  
**GROUP BY CITY;**

iii) Display all the rows where the Amount deposited is above the average Amount deposited. **2 Marks**

**SELECT \***  
**FROM CASH**  
**WHERE DEP>(SELECT AVG(DEP)FROM CASH);**

iv) Display all the rows from this table where the Bank account Number is divisible by 5. **1 Mark**

**SELECT \***  
**FROM CASH**  
**WHERE MOD(BAN,5)=0;**

(d) There exists a table NCAR containing columns Registration Number (REGNO, character), Model of the car (MAKE, character), Date of Purchase (DOP, date) and Value of the car (Value, numeric).

Write MySQL queries for the following. **(1 mark each)**

i) Display all the rows from this table where Value is above 750000.

**SELECT \***  
**FROM NCAR**  
**WHERE Value > 75000;**

ii) Display all the rows from this table where Make is "HONDA".

**SELECT \***  
**FROM NCAR**  
**WHERE MAKE= 'HONDA';**

iii) Display the Model of the car labeled as 'Make of the Car' and Value of the car labeled as 'Price of the Car' from this table.

**SELECT MAKE AS 'Make of the Car', Value AS 'Price of the Car'  
FROM NCAR;**

iv) Display the Registration Number, Model of the car and Value of the car purchased before March 11, 2005 from this table.

**SELECT REGNO, MAKE, Value  
FROM NCAR  
WHERE DOP < '2005-03-11';**

v) Display the Registration Number, Model of the car and Value of the car where Model of the car 'MARUTI' from this table.

**SELECT REGNO, MAKE, Value  
FROM NCAR  
WHERE MAKE = 'MARUTI';**

vi) Display all the rows from this table in the descending order of Value.

**SELECT \*  
FROM NCAR  
ORDER BY Value DESC;**

vii) Display all the rows from this table where the first letter in the Model of the car is 'F'.

**SELECT \*  
FROM NCAR  
WHERE MAKE LIKE "F%";**

- Q5. (A) Answer *any one* sub-question from (a) , (b) in MS-EXCEL (8)  
(a) For the following spreadsheet obtain the Subtotals of the Salary Designation wise.

	A	B	C	D	E
1	NAME	DEPARTMENT	AGE	DESIGNATION	SALARY
2	SALIM	HR	30	MANAGER	45000
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4	RAHUL	HR	21	CLERK	25000
5	AANA	ACCOUNTS	29	MANAGER	50000
6	RAJNI	ACCOUNTS	24	CLERK	20000
7	ASHA	IT	30	MANAGER	35000

**Sorting on DESIGNATION**

**3 Marks**

1. Select the data A1:E7
2. From DATA TAB select SORT.
3. In Sort By select DESIGNATION and click on Ok.

**Subtotal of DESIGNATION Wise.**

**5 Marks**

1. Select the data A1:E7
2. From DATA TAB select Subtotal.
3. In the option 'At each Change in' select DESIGNATION.
4. In the option 'Use Function' select SUM.
5. In the option 'Add Subtotal to' select SALARY and click on Ok.

(b) For the following worksheet

	A	B	C	D
1	YEAR	SIMPLE INTEREST	COMPOUND INTEREST	DIFFERENCE
2	1			
3	2			
4	3			
5	4			
6	5			
7	6			
8	AMOUNT	500000		
9	RATE	9%		

Write the steps in MS-EXCEL to obtain

- i) SIMPLE INTEREST in column B where simple interest =  $P \times N \times R / 100$
- ii) COMPOUND INTEREST in column C where compound interest =  $P \times (1 + R/100)^N - P$ . Where P is AMOUNT, R is RATE and N is YEARS.
- iii) DIFFERENCE = COMPOUND INTEREST - SIMPLE INTEREST in column D.

**SIMPLE INTEREST**

**2 Marks**

1. Select C2 and type =  $\$B\$8 \times A2 \times \$B\$9$  and press enter.
2. Select C2 and drag the fill handle to C7.

**COMPOUND INTEREST**

**4 Marks**

1. Select D2 and type =  $\$B\$8 \times (1 + \$B\$9)^{A2} - \$B\$8$  and press enter.
2. Select D2 and drag the fill handle to D7.

**DIFFERENCE**

**2 Marks**

1. Select E2 and type =  $D2 - C2$  and press enter
2. Select E2 and drag the fill handle to E7.

Q5. (B) Answer **any one** sub-question from (c), (d) in MS-EXCEL

(7)

(c) Consider the following worksheet showing the Sales of 5 persons.

	A	B	C	D	E	F
1	NAME	SALES	COMMISSION	DISCOUNT	NET	TAX
2	ASIF	45000				
3	REHANA	60000				
4	SALMAN	25000				
5	ANWAR	70000				
6	AAMIR	20000				

Write steps to find for all the salesmen

- (i) Commission as 6% of the Sales or 5000 whichever is more in column C.
- (ii) Discount as 12% of the Sales or 4000 whichever is less in column D.
- (iii) Net as Sales - Commission - Discount in column E.
- (iv) Tax as 10% of Net in column F.

**COMMISSION**

**2 Marks**

1. Select C2 and type =  $\text{MAX}(B2 \times 6\%, 5000)$  and press enter.
2. Select C2 and drag the fill handle to C6.

**DISCOUNT**

**2 Marks**

1. Select D2 and type =MIN(B2\*12%,4000) and press enter.
2. Select D2 and drag the fill handle to D6.

**NET**

**2 Marks**

1. Select E2 and type = B2 - C2 -D2 and press enter
2. Select E2 and drag the fill handle to E6.

**TAX**

**1 Marks**

1. Select F2 and type = E2\*10% and press enter.
2. Select F2 and drag the fill handle to F6.

(d) Explain the following built in functions in MS-EXCEL

1. IPMT()
2. INT()
3. RATE()
4. MAX()
5. FLOOR()
6. NPER()
7. ROUND()

**GIVE 1 MARK EACH if definition or syntax or example is correct (Total 7)**

1. **IPMT ( )**: IPMT (Interest payment) function can be used to find the interest part of a payment based on periodic, constant payments and a constant interest rate.  
Syntax: IPMT(rate, per , nper , pv , fv ,type).
2. **INT ( )**: Rounds a number down to the nearest integer.  
e.g. =INT(2.9) gives 2 and =INT(-2.9) gives -3
3. **RATE ( )**: Returns the interest rate per period of an annuity.  
Syntax: RATE(nper, pmt, pv, fv, type, guess)
4. **MAX( )**: Returns the largest value from a set of values. Ignores logical values and text. Syntax: MAX(number1,number2,number3,..)  
e.g. MAX(2,5,7) gives 7.
5. **FLOOR ( )**: Rounds number down, towards zero, to the nearest multiple of significance. Syntax: FLOOR(number, significance)  
e.g. =FLOOR(17,5) gives 15 (rounds 17 down to the nearest multiple of 5)
6. **NPER( )**: Returns the number of periods for an investment based on periodic, constant payments and a constant interest rate.  
Syntax: NPER(rate, pmt, pv, fv, type)
7. **ROUND ( )**: Rounds the number to the given number of digits.  
Syntax( ): ROUND(number, number of digits)  
e.g. ROUND( 125.324,1) gives 125.3