

Time: 2½ Hours

Subject Code 23120

Total

Marks: 75

Corrected Solution Semester V, November 3, 2018

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 (True/False) (2)
- (a) The argument of a function can be a reference to another cell in the spreadsheet. **T**
- (b) To insert subtotal you must sort the list. **T**
- (c) A worksheet may have either a header or footer, but not both. **F**
- (B) Attempt any *two* sub-questions from (d), (e),(f) in MySQL (Multiple Choice) (2)
- (d) To indicate that there should be 6 integers and 2 decimal positions we use \_\_\_\_\_.
- 1)DECIMAL(8,2) 2)DECIMAL(6,2) 3)DECIMAL(2,6) 4)DECIMAL(2,8)**
- (e) To save the transaction we use \_\_\_\_\_.
- 1) Rollback 2) Save **3) Commit** 4) Return
- (f) A Database contains one or more \_\_\_\_\_.
- 1) Rows 2) Databases 3) Columns **4) Tables**
- (C) Attempt any *six* sub-questions from (g),(h),(i),(j),(k),(l),(m),(n),(o) in Data Communications, Networking and Internet. (True/False). (6)
- (g) Telecommunication system is an example of distributed processing. **T**
- (h) A network is used to share hardware and software. **T**
- (i) There is no way to handle collisions that occur in a bus topology. **F**
- (j) There are four types of twisted pair cables. **F**
- (k) The Presentation layer is one of the upper layers in the OSI model. **T**
- (l) OR is a Boolean operator. **T**
- (m) In the domain name system .com is used for business and commercial interests. **T**
- (n) Email can be sent with attachments. **T**
- (o) Spoofing refers to tricking or deceiving computer systems or other computer users. **T**
- (D) Attempt any *five* sub-questions from (p),(q),(r),(s),(t),(u),(v),(w) in Data Communications, Networking and Internet. (Multiple Choice) (5)
- (p) The transmission medium that carries the message is referred to as the \_\_\_\_\_.  
1) Protocol 2) gateway **3) Communication channel** 4) Transport
- (q) A \_\_\_\_ network spans a number of cities and countries.  
1) LAN 2) MAN **3)WAN** 4) None of these
- (r) In \_\_\_\_\_ topology all the nodes are connected with a single cable.  
**1) Bus** 2) Ring 3) Star 4) None of these

- (s) \_\_\_\_\_ is the fastest Internet account.  
 1) ISDN account 2) Shell account 3) Dial-up account 4) **Broadband account**
- (t) Internet Explorer is referred to as \_\_\_\_\_.  
 1) System Software 2) Utility Software 3) **Browsers** 4) Internet tools.
- (u) Full form of HTTP is Hyper Text \_\_\_\_\_ Protocol.  
 1) **Transfer** 2) Transport 3) Terminal 4) Transaction
- (v) The protocol to download email and store it in your computer is -----.  
 1) **POP** 2) NMTP 3) FTP 4) HTTP
- (w) \_\_\_\_\_ type of hackers break into the security system for non-harmful reasons.  
 1) Grey hat 2) Blue hat 3) **White hat** 4) Black hat

Q2. (A) Answer **any one** sub-question from (a), (b) in Data Communications, Networking and Internet. (8)

(a) Write the four main characteristics of LAN and WAN.

**LOCAL-AREA NETWORK (LAN)** (If any 4 points written give 4 MARKS)

1. In LAN the computers are geographically close together that is, in the same room, building or a campus, and are owned by a single organization.
2. LAN is a computer network that spans a relatively small area. Most LANs are confined to a single building or group of buildings, and consists of 2 or more computers.
3. Each node (individual computer) in a LAN has its own CPU with which it executes programs, but it is also able to access data and devices anywhere on the LAN.
4. This means that many users can share expensive devices, such as laser printers, as well as data.
5. Users can also use the LAN to communicate with each other, by sending e-mail or engaging in chat sessions.
6. One of the computers in the LAN is called the file server while others are called as workstations or clients or nodes. If required a LAN can contain more than one file server.
7. LANs are capable of transmitting data at very fast rates, much faster than data can be transmitted over a telephone line LANs have a speed of about 100 Mbps.
8. But the distance is limited, and there is also a limit on the number of computers that can be attached to a single LAN.
9. LANs are owned by a single organization.
10. Two or more LANs can be connected using Bridges or Gateways.
11. LAN may use either Star topology, Ring topology or Bus topology.

**WIDE AREA NETWORK (WAN)** (If any 4 points written give 4 MARKS)

1. A WAN is a computer network that spans a relatively large geographical area and covers many cities, states, countries and continents.
2. It interconnects many small LANs and MANs together to form a network.
3. The computers in a WAN can be anywhere in the world.
4. Generally in a WAN there is more than one file server.
5. The file server manages the sharing of resources.
6. They operate at slower speeds of 1 – 10 Mbps.
7. The computers in a WAN are connected using telephone network, undersea cables or satellites.

8. Communication between computers is provided by a third party e.g. Telephone Company, or a satellite service carrier.
9. Different types of Computers using different operating systems can be connected in a WAN.
10. WANs use Mesh Topology, in which there are multiple routes for data to travel from one computer to another.

(b) Write short notes on i) Twisted Pair Cable ii) Fiber Optic Cable

**Twisted-Pair Cable:** (If any 4 points written give 4 MARKS)

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.

**Fibre-Optic Cable:** (If any 4 points written give 4 MARKS)

1. 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.

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

(c) What is a protocol? Describe any three layers of TCP/IP protocol.  
(If TCP/IP explained give 3 marks, any three layers mentioned give 2 marks, layers explained full marks)

TCP/IP:

- An abbreviation for Transmission Control Protocol/ Internet Protocol.
- This protocol gets its name from two of the main protocol within the stack: TCP and IP.
- TCP is the Transmission Control Protocol, which is responsible for connection-oriented communication using error checking.
- IP – Internet Protocol, it is implemented in the addressing system used to identify devices.
- Although TCP/IP was developed for use on the internet, it is implemented to build LANs, MANs, and WANs. It is also used within a variety of platforms including UNIX, WINDOWS and Macintosh.

Layers of TCP/IP:

TCP/IP protocol suite is made of five layers: Physical, Data Link, Network, Transport and Application.

1. Application
2. Transport
3. Internet/network
4. Data Link
5. Physical

Application Layer Protocols:

The Session, Presentation and Application layers of the OSI model are represented in TCP/IP by a single layer called the Application layer.

The Application layer provides networks services to the end users, such as e-mail and File transfer.

Transport Layer Protocols:

The function of protocols at this layer is reliable and efficient delivery of data packets to the destination. In TCP/IP two Transport Layer protocols TCP and IP provide the end-to-end communication services.

Internet or Network Layer Protocol:

The Internet Layer is responsible for logical addressing of devices on the network, as well as routing data between a source and destination.

Data Link Layer:

The data link layer breaks up the input data into data frames and then transmits these frames one after the other. The receiving computer sends an acknowledgement frame back to the sender. This layer also controls the speed at which the data is sent from the sender to the receiver.

Physical layer:

This layer is responsible for transmitting bits over a communication channel. This layer handles issues such as the voltage levels for a 0 and a 1 bit, the time for which a bit lasts on the channel, how connection is broken after the transmission of data, the number of pins a connector has etc.

- (d) What is hacking and explain any three types of hackers.

**(Explanation of hacking give 2 marks, if any 3 types are mentioned give 3 marks, if explanation of type is given give full 7 marks)**

Hacking is the act of violating computer networks and security for malicious intent or personal gain. Hacking can also be defined as gaining unauthorized access to a computer in order to destroy information contained therein.

Hackers seek and exploit weakness in a computer system or network. Hackers may be motivated by various reasons which could be mere challenge or enjoyment.

Ethical hacking is the penetration of computer networks with due permissions from the concerned organization without malicious intent and for the sole purpose of testing security and exposing vulnerabilities or weaknesses in a computer system or network.

**Types of Hackers:**

White hat: They break into the security system for non-harmful reasons, like to test the security system.

Black hat: They are hackers who break computer security for personal gain or just for fun. They break into secure networks and destroy data, or create problems in the network that make it unstable and not usable. They are also referred as 'crackers'.

Grey hat: They are a combination of white hat and black hat hackers. They may hack into a computer system or network with the intention of informing the administrator of that network that there is some security issues in that network that needs to be corrected. They could offer their services to remove and correct these defects.

Blue hat: They are persons who are outside the computer security testing firms, who check the system for bugs prior to it being launched, so that these bugs if any can be removed.

Elite hacker: They are said to be among the most skilled among the hackers. Hence the name elite.

Neophyte: They are persons who are new to hacking and have nearly no knowledge or experience about the methods used in hacking.

Script kiddie: They are persons who use readymade pre-written automated tools by others to break into computer systems. They have very little understanding of the concepts involved or of the scripts used.

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

- (a) Write MySQL statement to create a table called BEST having the columns Consumer Number (CNO, integer, Primary key), Consumer Name (CNAME, character with variable width 30 columns), Type of Connection (TYPE, character with variable width 25 columns default value "INDUSTRIAL") and Bill Amount (BILL, width of 9 including 2 decimals, positive).

<b>CREATE TABLE BEST</b>	<b>1 Mark</b>
<b>(CNO SMALLINT PRIMARY KEY,</b>	<b>2 Marks</b>
<b>CNAME VARCHAR(30),</b>	<b>1 Mark</b>
<b>TYPE VARCHAR(25) DEFAULT "INDUSTRIAL",</b>	<b>2 Marks</b>
<b>BILL DECIMAL(9,2) UNSIGNED);</b>	<b>2 Mark</b>

- (b) Write MySQL statement to create a table called COMPANY having columns Employee Number (EN, Integer, should be increased by 1 automatically), Name of Employee (NAME, character with width 30 columns), Department Name (DEPT, character with variable width 20 columns, should not be empty), Gender (GENDER, Boolean) and Provident Fund Amount (PF, 8 integer and 2 decimals).

<b>CREATE TABLE COMPANY</b>	<b>1 Mark</b>
<b>(EN SMALLINT AUTO_INCREMENT PRIMARY KEY,</b>	<b>2 Marks</b>
<b>NAME CHAR(30),</b>	<b>1 Mark</b>
<b>DEPT VARCHAR(20) NOT NULL,</b>	<b>2 Marks</b>
<b>GENDER BOOLEAN,</b>	<b>1 Mark</b>
<b>PF DECIMAL(10,2));</b>	<b>1 Mark</b>

OR

<b>CREATE TABLE COMPANY</b>	<b>1 Mark</b>
<b>(EN SMALLINT AUTO_INCREMENT,</b>	<b>2 Marks</b>
<b>NAME CHAR(30),</b>	<b>1 Mark</b>
<b>DEPT VARCHAR(20) NOT NULL,</b>	<b>2 Marks</b>
<b>GENDER BOOLEAN,</b>	<b>1 Mark</b>
<b>PF DECIMAL(10,2));</b>	<b>1 Mark</b>

- (B) Answer **any one** sub-question from (c), (d) in MySQL (7)
- (c) Explain the following built-in functions in MySQL.

- 1) LOWER()    2) LTRIM()    3) REVERSE()    4) DAY()  
 5) ABS()    6) TIME()    7) MONTHNAME()

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

**1. LOWER(*str*):** Returns the string *str* with all alphabets in it converted to lower cases.

Example: mysql> SELECT LOWER("ADITYA");    gives aditya

**2. LTRIM(*str*):** Returns the string *str* with leading blank spaces removed.

Example: mysql> SELECT LTRIM(" Hello");    gives "Hello"

**3. REVERSE(*str*):** Returns the alphabets in the string *str* in reverse order.

Example: mysql> SELECT REVERSE("MUMBAI");    gives IABMUM

**4. 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

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

SELECT ABS(-56); gives 56

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

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

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

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

- (d) There exists a table called PICNIC containing the columns Roll Number (RNO, integer, Primary Key), Name (SNAME, character variable width 20), Date of birth (DOB, Date), Gender (GENDER, character width 1) and Division (DIVISION, character variable width 4).

Write MySQL statements for the following. **1 MARK EACH (Total 7)**

- i) Display the structure of the table PICNIC.

**DESC PICNIC;**

- ii) Enter the following one row of data in this table.

RNO	SNAME	DOB	GENDER	DIVISION
101	REKHA	2001-03-01	F	A

**INSERT INTO PICNIC VALUES (101, "REKHA", "2001-03-01", "F", "A");**

- iii) Add a new column Mobile Number (MOB, integer) at the end of the table PICNIC.

**ALTER TABLE PICNIC**

**ADD MOB INT;**

- iv) Delete the row where roll number of the student is 56.

**DELETE FROM PICNIC WHERE RNO=56;**

- v) Change the Date of Birth of student with roll number 11 to September 7, 1999.

**UPDATE PICNIC**

**SET DOB="1999-09-07" WHERE RNO=11;**

- vi) Change the size of the column SName to 30 columns.

**ALTER TABLE PICNIC**

**MODIFY SNAME VARCHAR(30);**

vii) Rename the table PICNIC as FUNPICNIC.  
**RENAME TABLE PICNIC TO FUNPICNIC; OR**  
**ALTER TABLE PICNIC RENAME FUNPICNIC;**

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

(a) There exists a table AMAZON having the columns Purchaser's Number (PNO, integer), Purchaser's Name (PNAME, character), Receipt Number (RNO, integer, primary key), Total Cost (TCOST, integer) and Date of Purchase (PURDT, date). Write MySQL statements for the following.

i) Display Purchaser's name, Receipt Number and Total Cost from this table where Date of Purchase is January 1, 2018.

**SELECT PNAME, RNO, TCOST** **1 Mark**  
**FROM AMAZON**  
**WHERE PURDT= "2018-01-01";**

ii) Display Purchaser's Name and Total Cost where Total Cost is equal to the maximum Total Cost.

**SELECT PNAME, TCOST** **2 Marks**  
**FROM AMAZON**  
**WHERE TCOST= (SELECT MAX(TCOST) FROM AMAZON);**

iii) Display Date of Purchase, maximum and minimum Total Cost grouped by Date of Purchase.

**SELECT PURDT, MAX(TCOST), MIN(TCOST)** **2 Marks**  
**FROM AMAZON**  
**GROUP BY PURDT;**

iv) Display Purchaser's Name, Date of Purchase and Total Cost where Total Cost is more than the average Total Cost.

**SELECT PNAME, PURDT, TCOST** **2 Marks**  
**FROM AMAZON**  
**WHERE TCOST > (SELECT AVG(TCOST) FROM AMAZON);**

v) Display Purchaser's Name, Total Cost and "Discount" as 10% of Total Cost.

**SELECT PNAME, TCOST, TCOST\*.1 AS "DISCOUNT"** **1 Mark**  
**FROM AMAZON;**

(b) There exists a table INSTITUTE containing columns Roll Number (RNO, integer, primary key), Name (SNAME, character), Age (AGE, integer), Fees (FEES, decimal (8, 2)). There exists another table PERFORMANCE containing columns Roll Number (RNO, integer, primary key), Total marks (TOTAL, integer).

Write MySQL statements for the following.

i) Display Name, Age and Total marks of a student with Roll Number 100 using both the tables.

**SELECT SNAME, AGE, TOTAL** **2 Marks**  
**FROM INSTITUTE, PERFORMANCE**  
**WHERE INSTITUTE.RNO= PERFORMANCE.RNO AND RNO=100 ;**

**OR**

**SELECT SNAME, AGE, TOTAL**  
**FROM INSTITUTE INNER JOIN PERFORMANCE**  
**USING (RNO) WHERE RNO=100;**

**OR**

**SELECT SNAME, AGE, TOTAL**  
**FROM INSTITUTE A, PERFORMANCE B**  
**WHERE A.RNO= B.RNO AND RNO=100 ;**

ii) Display Name, Age and Total marks of students getting Total Marks more than or equal to 400 using both the tables.

```
SELECT SNAME, AGE, TOTAL
FROM INSTITUTE, PERFORMANCE
WHERE INSTITUTE.RNO= PERFORMANCE.RNO AND TOTAL >=400;
```

2 Marks

OR

```
SELECT SNAME, AGE, TOTAL
FROM INSTITUTE INNER JOIN PERFORMANCE
USING (RNO) HAVING TOTAL >= 400;
```

OR

```
SELECT SNAME, AGE, TOTAL
FROM INSTITUTE A, PERFORMANCE B
WHERE A.RNO= B.RNO AND TOTAL >=400;
```

iii) Display Roll number and Total marks of students who have scored more than average Total Marks using table PERFORMANCE.

```
SELECT RNO, TOTAL
FROM PERFORMANCE
WHERE TOTAL > ( SELECT AVG(TOTAL) FROM PERFORMANCE);
```

2 Marks

iv) Display Name and Fees of students who pay maximum Fees using table INSTITUTE.

```
SELECT SNAME, FEES
FROM INSTITUTE
WHERE FEES=(SELECT MAX(FEES) FROM INSTITUTE);
```

2 Marks

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

(c) There exist a table called RMALL containing columns Department Name (DEPT, character), Department Manager Name (MNAME, character), Date of Sale (DSALE, date), Sale Amount (SAMT, numeric) and Discount Amount (DISCOUNT, numeric).

Write MySQL statements for the following:-

i) Display Department Name, Manager Name, total and average Sale Amount grouped as per Department Manager.

```
SELECT DEPT, MNAME, SUM(SAMT), AVG(SAMT)
FROM RMALL
GROUP BY MNAME;
```

2 Marks

ii) Display Department Name, Manager Name, minimum and maximum of the Discount Amount of each Department.

```
SELECT DEPT, MNAME, MIN(DISCOUNT), MAX(DISCOUNT)
FROM RMALL
GROUP BY DEPT;
```

2 Marks

iii) Display all the rows where the Sale Amount is equal to maximum Sale Amount.

```
SELECT * FROM RMALL
WHERE SAMT=(SELECT MAX(SAMT) FROM RMALL);
```

2 Marks

iv) Display Department Name, Manager Name, Sale Amount where Sale Amount is between 45000 and 70000.

```
SELECT DEPT, MNAME, SAMT
FROM RMALL
WHERE SAMT BETWEEN 45000 AND 70000;
```

1 Marks



- (d) There exists a table STUDENT containing columns Roll Number (RNO, integer), Students Name (SNAME, character), Age (AGE, integer), Mobile Number (MOBILE, integer) and Fees Paid (FPAID, numeric).

Write MySQL queries for the following. **1 MARK EACH (Total 7)**

- i) Display all the rows from this table where Student Name contains 'R'.

**SELECT \* FROM STUDENT  
WHERE SNAME LIKE "%R%";**

- ii) Display all the rows from this table where Age is more than 18.

**SELECT \* FROM STUDENT  
WHERE AGE > 18;**

- iii) Display Roll Number, Student Name labeled as 'Name of the Student' and Fees Paid from this table.

**SELECT RNO, SNAME AS "Name of the Student", FPAID FROM STUDENT;**

- iv) Display Roll Number, Student Name and Age from this table where Fees Paid is more than 7500.

**SELECT RNO, SNAME, AGE FROM STUDENT  
WHERE FPAID > 7500;**

- v) Display all the rows from this table in the ascending order of Roll Numbers.

**SELECT \* FROM STUDENT ORDER BY RNO;**

- vi) Display all the rows from this table where Age is divisible by 5.

**SELECT \* FROM STUDENT WHERE MOD(AGE,5)=0;**

- vii) Display Students Name, Mobile Number and Fees Paid from this table.

**SELECT SNAME, MOBILE, FPAID FROM STUDENT;**

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

(8)

- (a) The following data has been entered in a worksheet.

	A	B	C	D	E	F	G	H
1	RNO	NAME	ACC	ECO	MHRM	COMP	TOTAL	AVERAGE
2	152	AVINASH	88	80	92	99		
3	176	DIANA	60	64	80	97		
4	243	SAPNA	45	38	65	80		
5	362	KARAN	69	76	72	90		
6	89	ANU	98	90	98	100		
7	127	SAMPATH	87	85	90	98		
8								
9						MAX. AVG MARKS		

Write the steps to obtain

- i) Total Marks in column G  
ii) Average of best three subjects in column H.  
iii) Maximum average marks in cell H9.

**TOTAL MARKS**

(2 marks)

1. Select G2 and type = SUM(C2:F2) and press enter.
2. Select G2 and drag the fill handle to G7.

**AVERAGE OF BEST 3 SUBJECTS**

(4 Marks)

1. Select H2 and type =(G2-MIN(C2:F2))/3 and press enter.
2. Select H2 and drag the fill handle to H7.

**MAX AVERAGE MARKS**

(2 marks)

1. Select cell H9 and type= MAX(H2:H7)

- (b) For the following spreadsheet write the steps to obtain the subtotals of sales city wise.

	A	B	C
1	NAME	CITY	SALES
2	NIRAJ	MUMBAI	78000
3	KARTHIK	PUNE	60000
4	JAY	MUMBAI	100000
5	RAVPREET	NAGPUR	68000
6	RAM	NAGPUR	62000
7	DHEERAJ	PUNE	77000
8	ANUP	MUMBAI	75000

**Sorting on Class** (3 marks)

1. Select the data A1:C8
2. From DATA TAB select SORT.
3. In Sort By select City and order select A to Z and click on Ok.

**Subtotal of Fees Class Wise** (5 marks)

1. Select the data A1:C8
2. From DATA TAB select Subtotal.
3. In the option 'At each Change in' select City.
4. In the option 'Use Function' select SUM.
5. In the option 'Add Subtotal to' select Sales and click on Ok

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

- (c) For the following spreadsheet write the steps to obtain the Pivot table showing total salary and lowest salary department wise in column G.

	A	B	C	D
1	NAME	AGE	DEPT	SALARY
2	VINAYAK	42	A/C	48000
3	NAVIN	28	PUR	32000
4	PADMA	25	ADMIN	25000
5	MOHAN	44	PUR	55000
6	PETER	46	ADMIN	46000
7	MUSCAN	29	A/C	30000
8	BHAVYA	32	PUR	36000

1. Select the data A1:D8 (1 mark per step)
2. From the Insert Tab select Pivot Table.
3. In the option select the table or range, type A1:D8 (or accept pre-selected range)
4. In the option where you want the Pivot table report, select existing table and type the location as G1.
5. Drag Department to the row area.
6. Drag Salary to the data area. It becomes Sum of Salary.
7. **Again drag Salary to the data area. It becomes Sum of Salary.** Click on Sum of Salary, select value field settings, select Min Salary and click on Ok. Minimum Salary is obtained.

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

1. FV()
2. PPMT()
3. ROUNDDOWN()
4. MOD()
5. INT()
6. SQRT()
7. COUNT()

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

**1. FV():** Returns the future value of an investment based on periodic, constant payments and a constant interest rate.

Syntax is =FV(rate, nper, pmt, pv, type)

**2. PPMT ():** Returns the payment on the principal for a given investment based on periodic, constant payments and a constant interest rate.

Syntax: =PPMT(rate, per, nper, pv, fv, type).

**3. ROUNDDOWN():** It is used to round a number down towards zero .

Syntax: ROUNDDOWN(number,num\_digits)

Eg: =Rounddown(56.8,0) gives 56

**4. MOD(number,divisor):** Returns the remainder after number is divided by divisor.

e.g. =MOD(8, 3) gives 2

**5. INT():** Rounds a number down to the nearest integer.

e.g. =INT(14.8) gives 14

**6. SQRT(number):** Returns the square root of positive numbers.

e.g. =SQRT(81) gives 9

**7. COUNT():** Counts the number of values in a given range e.g. =COUNT(B2:B7)