Syllabus for Hardware & Networking

HARDWARE:

- Computer Fundamentals.
- Introduction to Computers.
- Types of Computers.
- Introduction to Input Output Devices.
- Introduction to Storage Devices.
- Principals of Data Communication.
- Hardware Configuration
- Basic Electricity and Electronics.
- Work of Different ICs.
- Introduction to basic components of a typical PC.
- Assembling a PC.
- Basic Trouble shooting during the assembling.
- Basic troubleshooting of PC.
- BIOS & Installing Operating System.
- Boards and Other Components testing Logic and Digital Multi-Meter Using.

NETWORKING:

- Introduction to Various types of Cables and Connectors Used in Networking.
- Introduction to Networking and Networking Concepts.
- Networking Fundamentals & Network Configuration.
- Explain network technologies.
- Explain how devices access local and remote network resources.
- Describe router hardware.
- Repeaters, Hubs, Switches, Bridges, Routers.
- Configuration of IP Address.
- LAN Practical's.
- IP Addressing and IP Classes.
- Basic Network Troubleshooting.
- Basics of Network Security.

Principal
Anjuman-i-Islam's
Akbar Peerbhoy College of Com. & Eco.

Form No. _____

Anjuman-i-Islam's
Akbar Peerbhoy College of Commerce and Economics
NAAC ACCREDITED COLLEGE
Maulana Shaukatali Road, Do Taki, Mumbai - 400 008.
Tel. No. 23074122 / 2308 3405, Web Site: www.apcollege.org

ADMISSION FORM FOR

HARDWARE & NETWORKING COURSE

BATCH NOV'22 TO JAN'23

At the desire of my parent/guardian, I seek admission in **HARDWARE & NETWORKING COURSE** in your college.

FULL NAME OF THE STUDENT:

(Use one square for each alphabet (IN CAPITAL LETTERS)

Surname:	S	H	A	I	K	H										
Name:	M	O	H	A	M	M	E	D		H	A	M	Z	A.		
Father's Name:	F	A	R	I	D		A	H	M	E	D.					
Mother's Name:	S	A	L	M	A		S	H	A	I	K	H.				

RESIDENTIAL ADDRESS: 221 'S.V.P road topiwala buld no 16 DONGRI MUMBAI -400009.

Pin 400009. Tel 7021980365 C/o Tel. —

DOB: | 1 | 2 | 1 | 0 | 2 | 0 | 0 | 4 | Date Month Year

Age: | 1 | 8 | Year

Place of Birth: MUMBAI

Nationality: INDIAN Religion: ISLAM Caste: — Class: FY. BSc. I
(Open/SC/ST/OBC)

E-Mail ID: 7021980365h@gmail.com

Aadhaar No.: | 2 | 9 | 5 | 2 | 7 | 2 | 2 | 7 | 7 | 7 | 4 | 8 |

Signature: *Hamza*

Form No. _____

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. NAAC ACCREDITED COLLEGE
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Surname:

K	H	A	N													

Name:

S	H	A	F	I												

Father's Name:

S	A	B	I	R												

Mother's Name:

Y	A	S	M	E	E	N										

RESIDENTIAL ADDRESS : R. No. 112 6/6, psem nagar colony, worli naka, Mumbai

Pin **400018**   Tel **7208180229**   C/o Tel. **9594207852**

DOB:

0	2	1	1	2	0	0	4
Date	Month		Year				

Age:

1	8
Year	

Place of Birth: Beed .

Nationality : Indian   Religion: Muslim   Caste: Muslim   Class: Fy-bsc it /A/4
(Open/SC/ST/OBC)

E-Mail ID: Khanshafi3034@gmail.com.

Aadhaar No. :

5	7	1	6	9	7	1	4	2	1	4	0

Signature: _Khan_

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Akbar Peerbhoy College of Commerce and Economics
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(Use one square for each alphabet (IN CAPITAL LETTERS)

Surname:	S	H	A	2	K	H									
Name:	F	A	I	Z	A	N									
Father's Name:	H	A	R	O	O	N									
Mother's Name:	N	A	A	Z	N	E	E	N							

RESIDENTIAL ADDRESS: Sunder Society mmrda mahada colony vashinaka chembur mumbai 400074

Pin 400074   Tel 9321834010   C/o Tel. ____

| DOB: | 3 | 1 | 0 | 8 | 2 | 0 | 0 | 4 | Age: | 1 | 8 | Place of Birth: | Mumbai |
| | Date | | Month | | Year | | | | Year | | | |

Nationality: Indian   Religion: MUSlim   Caste: —   Class: fybscit
(Open/SC/ST/OBC)

E-Mail ID: Shaikh faizan 25561@gmail.com

Aadhaar No. : | 4 | 3 | 7 | 6 | 7 | 3 | 0 | 1 | 5 | 6 | 1 | 9 |

Signature:

Anjuman-i-Islam's
Akbar Peerbhoy College of Commerce and Economics
NAAC ACCREDITED COLLEGE
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ADMISSION FORM FOR

HARDWARE & NETWORKING COURSE

BATCH NOV'22 TO JAN'23

At the desire of my parent/guardian, I seek admission in **HARDWARE & NETWORKING COURSE** in your college.

FULL NAME OF THE STUDENT:

(Use one square for each alphabet (IN CAPITAL LETTERS)

Surname: | K | H | A | N |
Name: | S | H | O | A | I | B |
Father's Name: | A | L | I | M |
Mother's Name: | S | H | A | M | I | M |

RESIDENTIAL ADDRESS: B-1 Dr Akram chawl Shastri Ngr Kajupada pipeline Kurla (w).

Pin 400072   Tel 7506488650   C/o Tel. 9870525540

DOB: 0 5 0 3 2 0 0 5   Date Month Year
Age: 1 7 Year
Place of Birth: Mumbai

Nationality: Indian   Religion: Islam   Caste: Muslim   Class: F.Y.IT/A/42
(Open/SC/ST/OBC)

E-Mail ID: Shoaibdada782@gmail.com

Aadhaar No.:

Signature:

What is a Computer:

A Computer is an electronic device with information to store a "data". The word computer has come from a French word "to Compute", which means to calculate. It has the ability to store, retrieve, and process data. You can use a computer for executing basic office work like typing documents, send email, and surf the internet. You can also use it to handle spreadsheets, accounting, database management, presentations, games, and many more.

Every computer consists of two basic parts – hardware and software:

(1) <u>Hardware:</u> Is physical entity of your computer which means anything that has a physical structure and which can be touched such as the computer monitor, keyboard etc. It is also known as heart of the computer.

(2) <u>Software:</u> Is any set of instructions that tells the hardware what to do and also how to accomplish each task. It can be called as the brain of the computer.

Electronic Numerical Integrator and Computer (ENIAC)

ENIAC's design and construction was financed by the United States Army, Ordnance Corps, Research and Development Command, led by Major General Gladeon M. Barnes.
The work on the computer began in secret at the University of Pennsylvania's Moore School of Electrical Engineeringunder the code name **"Project PX"**, with John Grist Brainerd as principal investigator.
The total cost was about $ 4,87,000, which equates to $ 68,16,000 (approx. 44 Crores) in 2017.

The construction contract was signed on June 5, 1943.

It was completed and introduced on 14TH Feb. 1946.

It was given a code name as 'Project PX'.

Chief investigator was John Grist Brainerd.

It was called as a "Giant Brain" by the press.

It took a human 20 hours in 30 seconds.

It measured 8 feet x 3'feet x 80 feet and weighed 27 tons.

It contained nearly 50 lakhs hand-soldered joints.

Types of Computers:

Two type of Computer, Personal computer such as Desktop and Laptop.

(1) Personal computer: - The personal computers is used in Offices, Home, Go downs, Work shop etc.

The popular types of personal computer are the IBM compatible and Macintosh computers. The first personal computer was produced by IBM in 1981 and was called the IBM PC (International Business Machines).
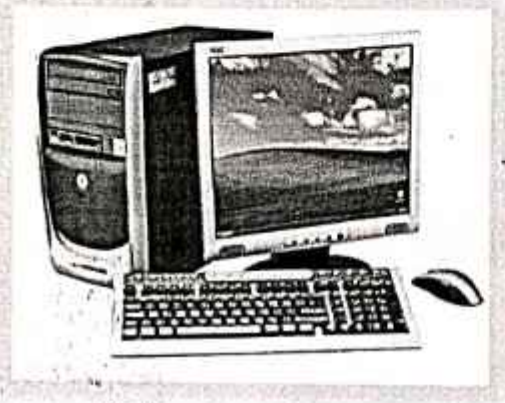
(2) Laptop computer sometimes called a notebook computer:-

(a) Laptop or notebook PC

(b) Tablets PC

(c) Pocket PC

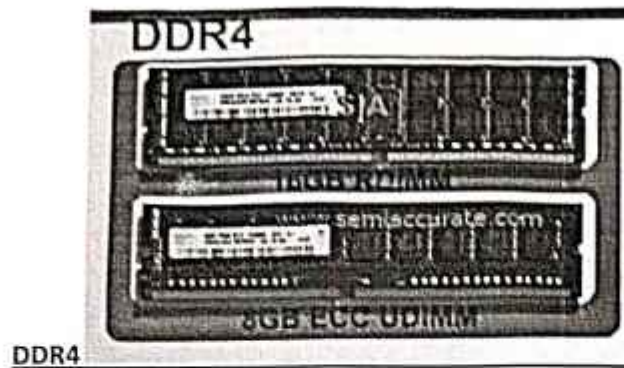(d) Personal Digital Assistant (PDA)

Ram = Random access Memory
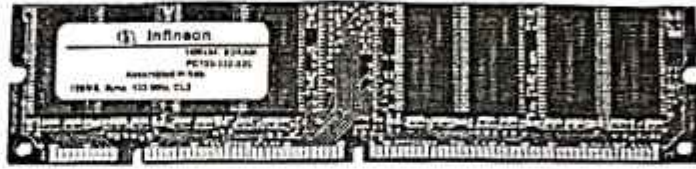
SDRAM

DDR

DDR2

DDR3

DDR4
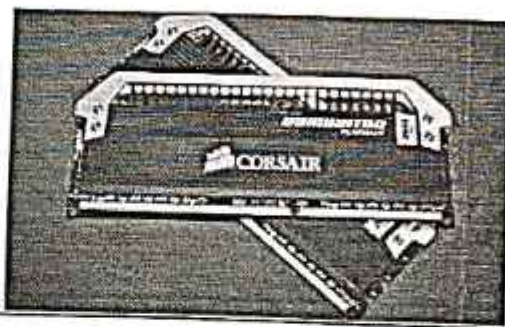
The First RAM modules to come into the market were created in 1951 and were sold until the late 1960s

Types of RAM

SIMM = SINGLE INLINE MEMORY MODULE

MICRODIMM = DUAL INLINE MEMORY MODULE

RDRAM - RIMM = RAMBUS DYNAMIC RAMDOM ACCESS MEMORY OR RAMBUS INLINE MEMORY MODULE

SODIMM = SMALL OUTLINE DUAL INLINE MEMORY MODULE

SDRAM SODIMM = SYNCHRONOUS DYNAMIC RANDOM ACCESS MEMORY
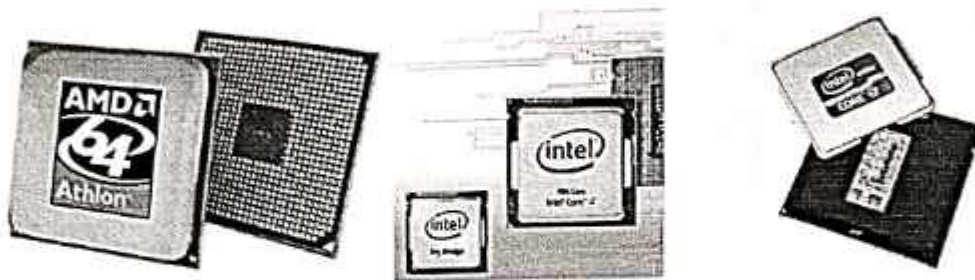
DDR = DOUBLE DATA RATE

DDR2 = DOUBLE DATA RATE2

DDR3 = DOUBLE DATA RATE3

DDR4 = DOUBLE DATA RATE4

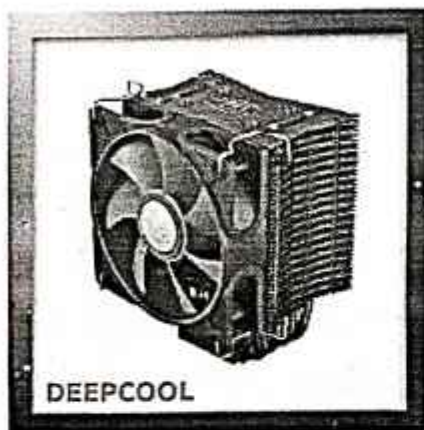### Central Processing Unit:

1. ### Micro Processor.

A microprocessor is a single integrated circuit (IC) that contains all the functionality of a central processing unit (CPU), which is the portion of the computer that processes computer instructions.

The functions of microprocessor are given below: (a) To fetch, decode and execute instructions. (b) To transfer data from one block to another block or from one block to I/O lines. (c) To give proper response to different externally produced interrupts according to their priority.

Heater Fan Processor

A computer fan is any fan inside, or attached to, a computer case used for active cooling, and may refer to fans that draw cooler air into the case from the outside, expel warm air from inside, or move air across a heat sink to cool a particular component

(1) Deep cool Fan Tower Type Universal CPU Cooler Fan GAMMAXX200 for Intel & AMD CPU

FULL FORMS:

LCD	= Liquid Crystal Display
LED	= Light Emitting Diode.
CRT	= Cathode Ray Tube
USB	= Universal Serial Bus
UPS	= Uninterruptible Power Source
CPU	= Central Process Unit
BASIC	= Beginning All Purpose Symbolic Introduction Code
SMPS	= Synchronized Mode of Power Supply
BIOS	= Basic Input Output Service
AGP	= Accelerated graphics Port
PCI (Slot)	= Peripheral Component Interconnector
LAN Port	= Local Area Network
CMOS	= Complementary Metal Oxide Semiconductor
IC	= Integrated Circuit
IDE	= Integrated Drive Electronics
RAM	= Random Access Memory
ROM	= Read Only Memory
IBM	= International Business Machines
AT	= Advanced Technology
ATX	= Advanced Technology Extended
VGA	= Video Graphics Adapter
DDR	= DOUBLE DATA RATE

POWER SUPPLY

SMPS = Switching Mode Power Supply

A switched-mode power supply (switching-mode power supply, SMPS, or switcher) is an electronic power supply that incorporates a switching regulator to convert electrical power efficiently. Like other power supplies, an SMPS transfers power from a source, like mains power, to a load, such as a personal computer, while converting voltage and current characteristics.

A Switch Mode Power Transformer (SMPT)
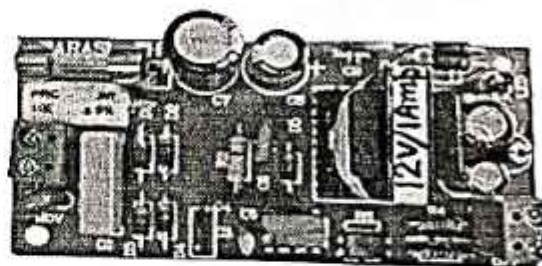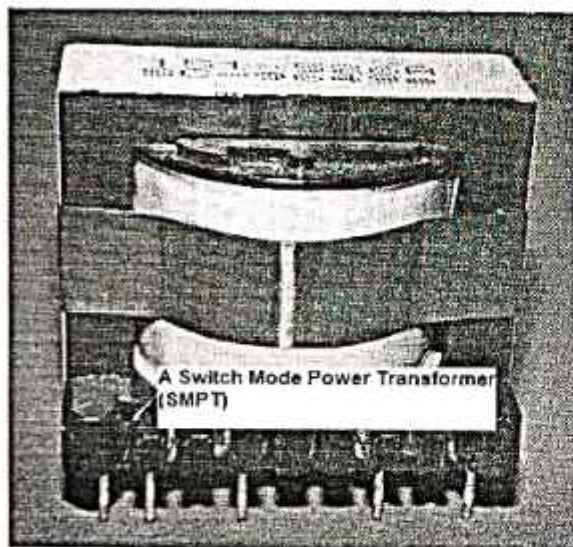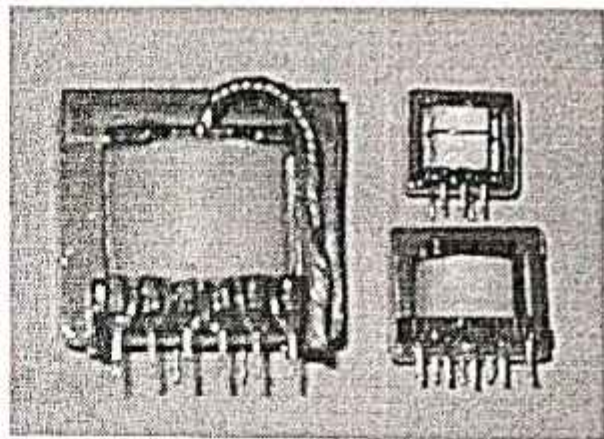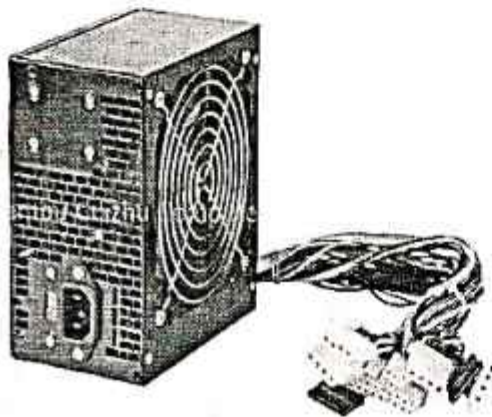
PROCESSOR GENERATION:

Sr. No.	MODEL	DATE	BIT	SPEED
1	4004	15 Nov 1971	4	400 KHz
2	8008	Apr 1972	8	500 – 800 KHz
3	8058	Mar 1976	8	5 MHz
4	8086	08 June 1978	16	5 MHZ – 10 MHz
5	8088	June 1979	16	5 MHZ – 8 MHz
6	80286	Feb 1982	32	6 MHz – 12 MHz
7	80386	17 Oct 1985	32	16 MHz – 33 MHz
8	80386	16 June 1988	32	16 MHz – 33 MHz
9	80486	10 Apr 1989	32	25 MHz – 50 MHz
10	80486	10 Aug 1992	32	66 MHz
11	Pentium I	22 Mar 1993	32	60 MHz – 66 MHz
15	Pentium II	7 May 1997	32	233 MHz – 300 MHz
17	Celeron	Oct 1998	32	333 MHz
18	Pentium III	25 Oct 1999	32	600 MHz – 733 MHz
19	Pentium IV	20 Nov 2000	32 / 64	1.4 GHz – 1.5 GHZ
22	Dual Core	June 2006	32 / 64	1.6 GHz – 2 GHz
23	Quad Core	Nov 2006	32 / 64	3 GHz – 3.2 GHz
24	I-3	Feb 2008	32 / 64	2 GHz
25	I-5	Jan 2010	32 / 64	2.7 GHz
26	I-7	Jan 2010	64	3.2 GHz

Networking

It was in 18th Century time of great mechanical systems accompanying the industrial revolution. The 19th Century was the age of steam engine. During 20th Century, the technology is dominated on gathering, processing and distribution.

The Merging of computer and communication has a strong influence on the way, computer systems are organized. The old model of single computer serving complete computational need has been replaced by one in which a large number of separate but interconnected computer do the job. The setup of system interconnected with each other called computer network.

The term 'Computer Network' is used to mean an interconnected collection of autonomous information. The connection can be wired or wireless.

Note: A large number with remote with printers and terminal is not a network. Nor is a system with one control and many slaves a network.

A **server** is a running instance of an application (software) capable of accepting requests from the client and giving responses accordingly. Servers can run on any computer including dedicated computers, which individually are also often referred to as "the server". In many cases, a computer can provide several services and have several servers running. The advantage of running servers on a dedicated computer is **security**. For this reason most of the servers are daemon processes and designed in that they can be run on specific computer(s).

Servers operate within a client-server architecture. Servers are computer programs running to serve the requests of other programs, the clients. Thus, the server performs some tasks on behalf of clients. It facilitates the clients to share data, information or any hardware and software resources. The clients typically connect to the server through the network but may run on the same computer. In the context of Internet Protocol (IP) networking, a server is a program that operates as a socket listener.[1]

Servers often provide essential services across a network, either to private users inside a large organization or to public users via the Internet. Typical computing servers are database server, file server, mail server, print server, web server, gaming server, and application server.[2]

Numerous systems use this client server networking model including Web sites and email services. An alternative model, peer-to-peer networking enables all computers to act as either a server or client as needed.

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Difference in Hub, Switch, Bridge, & Router:

In an Ethernet network there are 4 devices that from the outside look very similar. In this article we will look at the difference between hubs, switches, bridges, and routers.

Hub

A hub is the simplest of these devices. Any data packet coming from one port is sent to all other ports. It is then up to the receiving computer to decide if the packet is for it. Imagine packets going through a hub as messages going into a mailing list. The mail is sent out to everyone and it is up to the receiving party to decide if it is of interest.

The biggest problem with hubs is their simplicity. Since every packet is sent out to every computer on the network, there is a lot of wasted transmission. This means that the network can easily become bogged down.

Hubs are typically used on small networks where the amount of data going across the network is never very high.

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MS Ali Road, Two Tank Grant(E), Mumbai - 08

Certificate courses

Feedback Form

Name of the Course: Certificate Course in Hardware and Networking

Name of the Program In-charge: Mr. Altaf Chougule

Student Name (Optional) : Shaikh Mohammed Hamza

Sr. No	Question	Excellent	Good	Satisfactory	Poor
1	Content Delivery by Resource Person	✓			
2	Knowledge imparted by resource person		✓		
3	Did your purpose of attending the program get fulfilled		✓		
4	Overall program management		✓		
5	How much could you related with the subject		✓		

-x-x-x-x-

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Certificate courses

Feedback Form

Certificate Course in Hardware and Networking

Name of the Course: _____

Name of the Program In-charge: Mr. Altaf Chougule

Student Name (Optional) : __Khan Shafi__

Sr. No	Question	Excellent	Good	Satisfactory	Poor
1	Content Delivery by Resource Person		✓		
2	knowledge imparted by resource person	✓			
3	Did your purpose of attending the program get fulfilled	✓			
4	Overall program management	✓			
5	How much could you related with the subject		✓		

-x-x-x-x-

Attendance Record of Hardware & Networking Course Nov-2022 to Jan-2023 Batch

No.	Name of the Student	25-11-22	30-11-22	02-12-22	05-12-22	16-12-22	21-12-22	24-12-22	06-01-23	13-01-23	20-01-23	Total	Total Per (%)
1	SHAIKH MOHAMMED HAMZA FARID AHMED	3	3	3	3	3	3	3	0	3	3	27	90.00
2	KHAN SHAH SABIR	3	3	3	3	3	3	3	3	3	3	30	100.00
3	SHAIKH FAIZAN HAROON	3	3	3	3	3	3	3	3	3	3	30	100.00
4	KHAN SHOAIB ALIM	3	3	3	3	3	0	0	3	3	3	24	80.00
5	ANSARI IRSHAD AHMED NAUSHAD	3	3	3	3	3	3	3	3	3	3	30	100.00
6	ANSARI AFTAB MOHAMMED	3	3	3	3	3	3	3	3	3	3	30	100.00
7	KHAN MOHAMMAD ARSHAD ABU BAKAR	3	3	3	3	3	3	3	3	3	3	30	100.00
8	SHAIKH AMAD JALAL UDDIN	0	3	3	3	3	3	3	3	3	3	27	90.00
9	SAYED ADNAN SHADAB	3	3	3	3	3	3	3	3	3	3	30	100.00

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M S Road, Mumbai - 400 008

Sr No.	Name of the Students	Practical Out of 20	Theory (MCQ) Out of 10	Theory (Descriptive) Out of 20	Total Out of 50	Percentage %
1	SHAIKH MOHAMMED HAMZA FARID AHMED	20	9	20	49	98.00
2	KHAN SHAFI SABIR	20	9	19	48	96.00
3	SHAIKH FAIZAN HAROON	19	8	18	45	90.00
4	KHAN SHOAIB ALIM	20	6	19	45	90.00
5	ANSARI WAQAR AHMED NAUSHAD	18	7	19	44	88.00
6	ANSARI AFTAAB MOHAMMED	19	10	20	49	98.00
7	KHAN MOHAMMAD ARBAAZ ABU BAKAR	20	9	20	49	98.00
8	SHAIKH JAMAL ZIA UL HODA	19	10	18	47	94.00
9	SAYYED ADNAN ISHAQUE	20	10	17	47	94.00

Akbar Peerbhoy College of
M S. Road, Mumbai - 400 008

Since 1969

Anjuman-I-Islam's

Akbar Peerbhoy College of Commerce & Economics

(NAAC Accredited College)

CERTIFICATE

OF COMPLETION

This Certificate is awarded to

Mr. / Ms. _Shaikh Jamal Zia - ul - Huda._

of _____ Roll No. ____ Div: ____

For successfully completing

Add on Course in " Hardware & Networking"

From, _22nd Nov, 2022_ to _23rd Jan, 2023_

Program Incharge

Principal

Since 1969

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Akbar Peerbhoy College of Commerce & Economics

(NAAC Accredited College)

CERTIFICATE

OF COMPLETION

This Certificate is awarded to

Mr. / Ms. _Khan Shafi Sabir._

of _____ Roll No. _____ Div: ___

For successfully completing

Add-on-Certificate Course in Hardware & Networking

From, _20th Nov 2022_ to _23 Jan 2023_

_____
Program Incharge

_____
Principal

Since 1969

Anjuman-1-Islam's

Akbar Peerbhoy College of Commerce & Economics

(NAAC Accredited College)

CERTIFICATE

OF COMPLETION

This Certificate is awarded to

Mr. / Ms. _Shaikh Faizan ___ D Haroon_

of _____ Roll No. _____

For successfully completing

Add-on-Certificate Course in Hardware y Networking

From, _22ⁿᵈ Nov 2022_ to _23ʳᵈ Jan 2023_

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CERTIFICATE

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This Certificate is awarded to

Mr. / Ms. _Khan Shoaib Mohd Alim_

of _____ Roll No. ____ Div: ___

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Add-on Certificate Course in " Hardware & Networking "

From, _22nd Nov, 2022_ to _23rd Jan, 2023_

_____
Program Incharge

_____
Principal