Ans: to the qu: no: 02(b)

Major components of Switching System:-

1. Switching network.
2. Control sub system.
3. Signaling.
4. Trunk interface.
5. Subscriber link interface.
6. Line scanning unit.
7. Distributor unit.
8. Operator console.
9. Service Circuit interface.

Ans: to the Qu: No: 01 (a)

Telecommunication :- the exchange of information between two or many individuals is called communecation.
The telecommunication, word tele is Greek word which means distance. Hence, Telecommunecation means the exchange of information between two distance place.

Ans: to the Qu: No: 01 (b)

→ Need for switching Exchanges :-

the point-to-point connection for establihing communication requires the telephone sets to be linked using wires.

→ Switching provides a practical solution to the problem of connection multiple devices in a network.

→ It is more practical than using a bus topology.

Ans: to the Qu. no: 03(c)

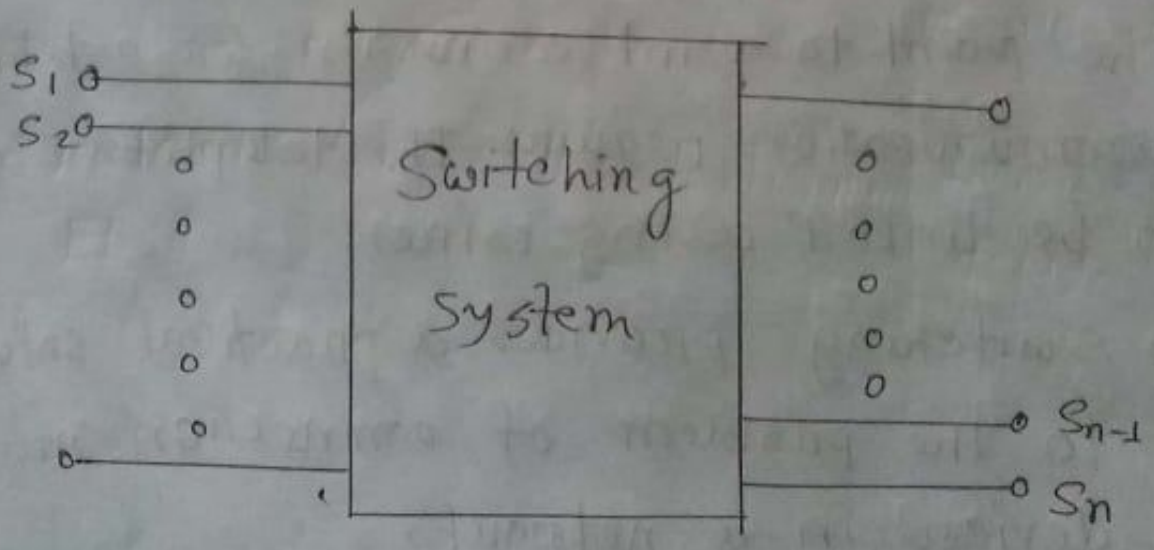
Advantages of Automatic Switching :-

- Language barriers will not affect the request for connection.
- Higher degree of privacy is maintained.
- Faster establishment and release of calls is done.
- Number of calls made in a given period can be increased
- Calls can be made irrespective of the Load on the system or the time of the day.

Ans: to the qu No. 01(c)

Block diagram of a Swithing System:-

This network connection cannot be simply made with telephone sets and bunch of wires, but a good system is required to make or break a connection. this system is known as a the switching system or the Exchange



Ans: to the Qu: no: 04 (a)

Crossbar Switching: A crosbar switching is a collection of switches arranged in a matrix configuration. and has multiple input and output lines that from a crossed-pattern of interconnecting lines between which a connection may be established by closing a switch located at each intersection, the elements of the matrix.

Ans: to the Qu: no: 04 (b)

Features of crosbar switching:-

1. While processing a call, the common control system helps in the sharing of resources.
2. The specific route functions of call processing are handwired

however, a geostationary point-to-point to multipoint connection in a broadcast.

4.) Since a geostationary communication satellite is placed at an altitude of about 36,000 km above the equator, the signal will have to travel a distance of 72,000 km or more between the source and the destination.

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Ans: to the Qu: no: 04(c)

Crossbar Switching Configuration:

the crossbar switching configuration are Non-bloking configurations. which have N2 switching elements for N subscriber and can make $\frac{N}{2}$ simultaneous conversation.

Non-blocking scheme has few disadvantage:

↳ Large number of switching element are required.

↳ thin is difficult to implement in practice

↳ This is neither a cost effectiv proces.

Ans: to the Qu: no: 06(c)

ISO OSI reference model:

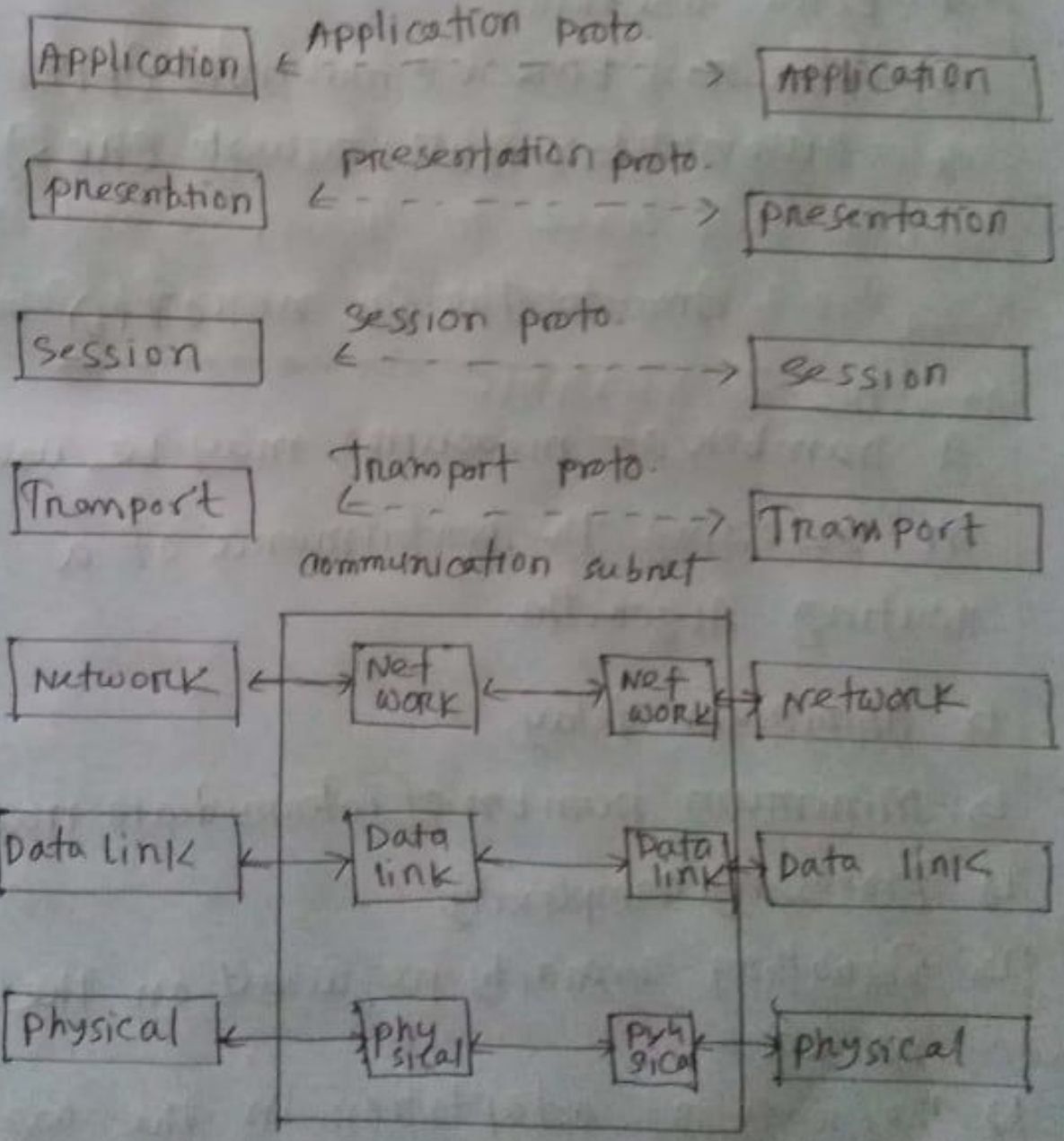


Figure: ISO-OSI reference model.

Ans: to the Qu: no: 06(c)

ISO OSI reference model:

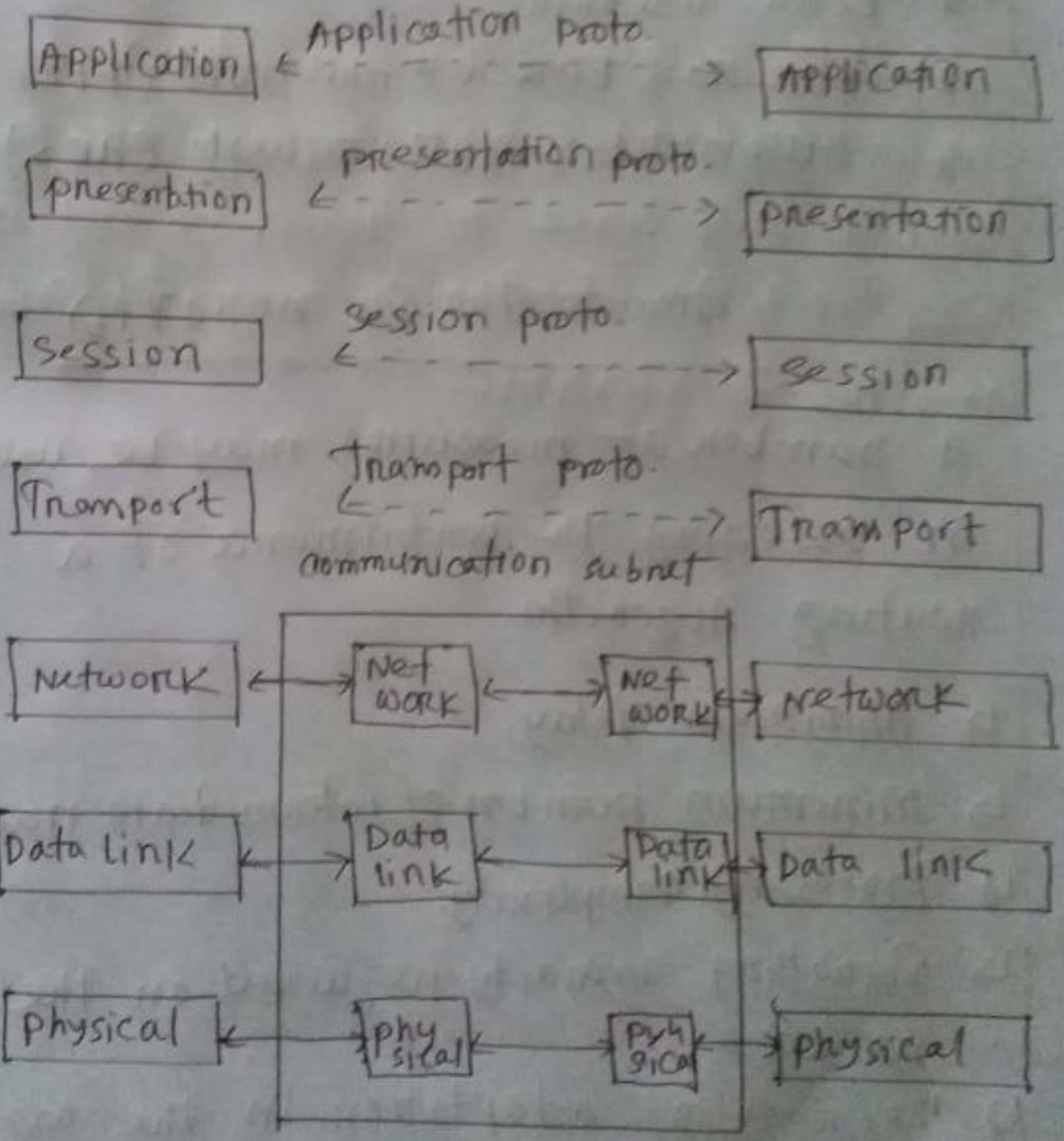


Figure: ISO-OSI reference model.

↳ Fairness to all types of traffic.
↳ Robustness.
↳ Stability.

Ans: to the Qu. no: 7(c)

Satelite Based Data Networks:-

1) Satelite network topology and confutation modulation scheme and bandwidth utilization, these are aspect of related to the physical Layer functions of the reference model.

2) Being a common communication resource accessible by all on a group of earth stations simultaneously. media access becomes a non trivial function in the data link layer.

3) satalite communication being broad-cast in nature, routing become a trivia function;

Ans: to the Qu: no: 7 (a)

There are three error control mechanism commonly used:

1. Echo checking.
2. Forward Error Correction (FEC)
3. Automatic repeat request (ARQ)

Ans: to the Qu: no: 07 (b)

A number of measures may be used in assessing the performance of a routing Algorithm.

↳ Minimum delay.
↳ Minimum number of intermidiate node.
↳ Processing complexity.
↳ Signalling capacity required on the network
↳ the rate of adaptation in the case of adaptive Algorithm.

Ans: to the Qu: no: 03(d)

A rotary dial phone uses the following for implementing pulse dialling:-

- Finger plate and spring.
- Shaft, gear, and pinion wheel.
- Pawl, and ratchet mechanism.
- Impulsing cam and suppressor cam or a trigger mechanism.
- Impulsing contact
- Centrifugal governor and worm gear.
- Transmitter, Receiver and bell-by-pass circuit.

Ans: to the qu. no: 02 (c)

Drawbacks of circuit switching:

→ Circuit switching establishes a dedicated connection between the end parties.

→ Bandwidth requirement is high even in cases of low data volume.

→ there is underutilization of system resources.

→ Time requires to establish connection may be high.

→ All packet are same path.

Ans: to the qu: no: 03(a)

Juncture :- the juncture is a junction that provides a folded connection for the local subscriber and the service circuit. If the called subscriber and the calling subscriber both are local, then the folded connection helps in making the connection to a local call, whereas the trunk lines will not be in use.

Ans: to the Qu: no: 03(b)

the switching systems are of following two types: -

1. the direct control switching system.
2. the indirect control switching system.

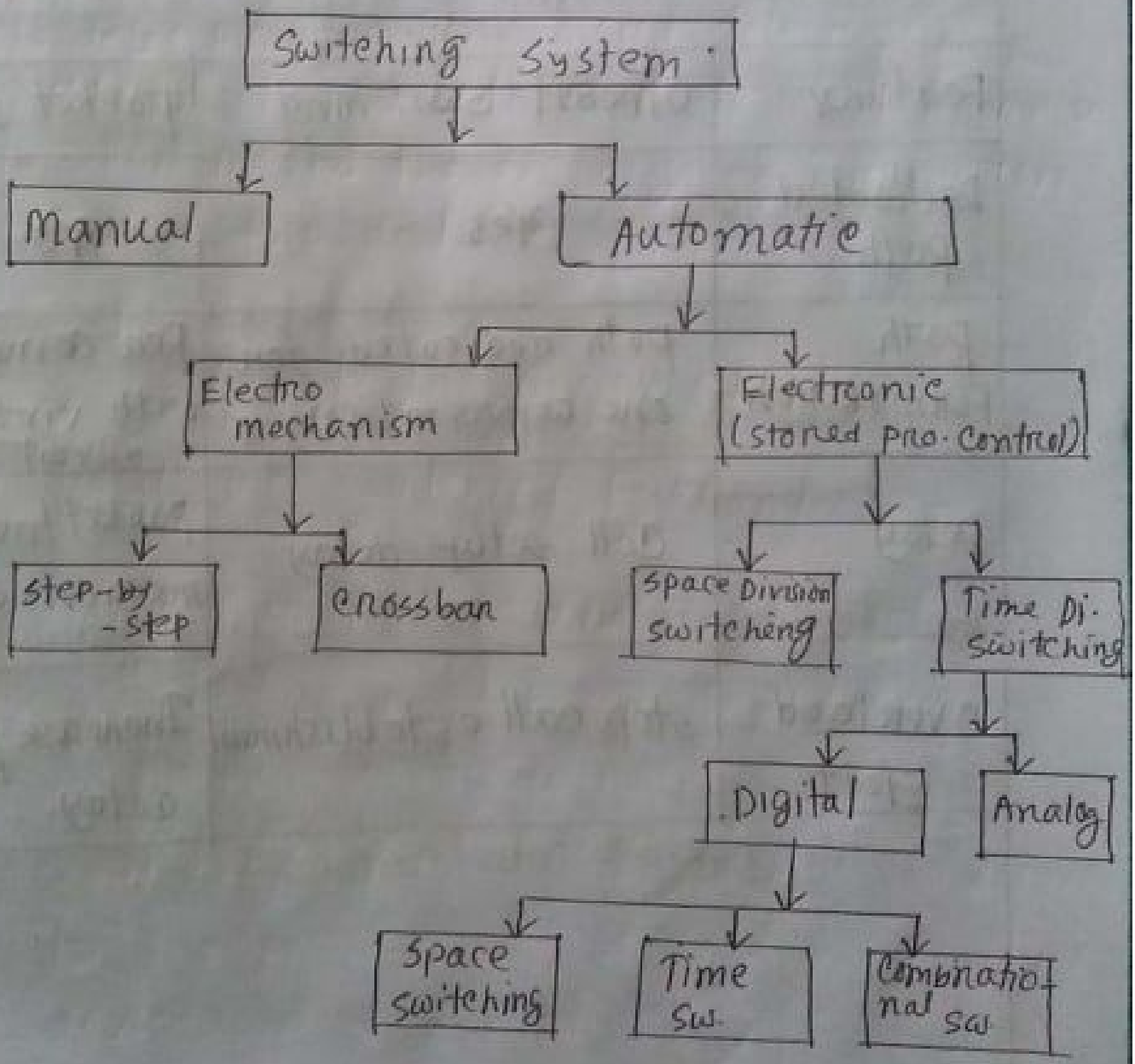
Ans: to the Qu: no: 02(a)

Advantage of packet switching over circuit switching :-

Features	Circuit switching	packet switching
Dedicated path	Yes	NO.
path Formulation	path dedicated for one conversation	Per conversation with virtual circuit
Delay	Call setup delay	Packet trans-mission delay.
Overload Efect	stops call establishment	Increase packet delay.

Ans: to the Qu: no. 01 (d)

→ Classification of Switching System;-



because of the wire logic computers.

3. the flexible system design helps in the appropriate ratio selection is allowed for a specific switch.

4. Fewer moving parts ease the maintainance of crossbar switching system.

the crossbar uses the common control networks which enable the switching network to perform event monitoring, call processing, changing, operating, and maintenance as discussed previously.

5. (a) What is Layer? – 01
(b) Write down the function of node processor –03
(c) What is network Layer? – 02
(d) Write down the benefit of Application Layer? – 4
(e) What do you mean LAN with example? – 4

6. (a) Write down the classification of Data Network – 02
(b) Describe ISO OSI reference model. – 08
(c) Write down the aspect of heterogeneity coven – 04

7. (a) Write down control mechanism error. 03
(b) Describe the performance of routing Algorithm. 06
(c) Write down the aspect of Satellite communication

8. (a) Area of LAN. (03)
(b) Advantage of LAN. (03)
(c) Write down the characteristics of fiber optical Network. – (4)
(d) Data Network standard. (04)

5. (a) What is Layer 2 – 01
(b) Write down the function of node processor –03
(c) What is Network Layer? – 02
(d) Write down the benefit of Application Layer? – 4
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Ans: to the Qu: no: 06 (a)

Data Network: are classified according to their geographical coverage: —

1. Wide are Network (WAN).
2. Metropoliton area Network (MAN).
3. Local Area Network (LAN).

Ans: to the Qu: no: 06 (b)

Aspects of heterogeneity coven :-

1. System in different vendors.
2. System under different management.
3. System of different complexities.
4. System of different technologies.

1. (a) Define Telecommunication. - 02

(b) What is the need for switching Exchanges. - 04

(c) Write the block diagram of switching system. 03

(d) Classify the switching System. 05

2. (a) What are the advantage of paeket switching over circuit switching? - 03.

(b) Major component of packet switching. - 04

(c) Drawbacks of circuit switching - 05

3. (a) What is junctures. - 02

(b) Clasify switching system - 02

(c) Write down the advantages of automatic switching system. - 05

(d) Describe a rotary dial phone's implementation pulse. - 05

4. (a) Define crossbar Switching? - 03.

(b) Write down the features of crossbar switching - 3

(c) Describe main concepts of crossbar switching - 08.