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Program	BSCS
Semester	4 <sup>th</sup>

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ANSWER

(a) What is an internet draft?

Internet draft is a series of working documents published by IETF. Typically they are drafts for RFCs, but many other works in progress not intended for publications as RFCs. During the development of a specification draft versions of the documents are made available for informal review & comment by placing them in IETF's internet-drafts directory. This makes an evolving working document readily available to a wide audience, facilitating the process of review & revision.

\* Internet drafts have no formal status & are subject to change or removal at any time. Therefore they shouldn't be cited or quoted in any formal document.

b) What are the differences between a proposed standard, draft standard, & standard?

	Proposed Standard	Draft Standard	Standard
1	The entry-level maturity for the standard track is	A specification from which at least two independent &	A specification for which significant implementation

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<p>"proposed standard" A specific action by the IESG is reviewed to move onto the standards track at the "proposed standard" level.</p>	<p>interoperable implementation from different code bases have been developed &amp; for which sufficient successful operational experience has been obtained may be</p>	<p>&amp; Successful operational experience has been obtained may be elevated to the internet standard level.</p>
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<p>A proposal standard specification is generally stable, has resolved known design choices is believed to be well understood has receive significant community review &amp; appears to enjoy enough community interest to be considered valuable.</p>	<p>A draft standard is normally must be well understood &amp; known to be quite stable both in its semantics &amp; as a basis for developing an implementation</p>	<p>An internet standard (which may simply be referred to as a standard) is characterized by a high degree of technical maturity &amp; by a generally held belief that the specified protocol or service provide significant benefit to the internet community.</p>
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<p>Further experience might result in a change or even retraction of the specification before it advances.</p>	<p>A draft standard is normally considered to be a final specification &amp; changes are likely to be made only to solve specific problems encountered.</p>	<p>All specifications unconditionally accepted.</p>
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Usually neither, implementation nor operational experience is required for the designation of a Specification as a proposed Standard. However such experience is highly desirable & will usually represent a strong argument in a favour of a proposed designation.

The reviewed for at least two independent & interoperable applies to all of the options & feature of the Specification in cases in which one or more options or featured have not been demonstrated interoperable implementation the Specification may advance to the draft standard level only if those options or featured are remove.

Has clear requirements of both proposal & draft & beyond.

5) its desirable to implement them in order to gain experience & to validate test & Clarify the Specification. However since the content of proposed Standard

in most circumstances its reasonable for vendors to deploy implementation of draft standard into a disruption sensitive environment

completely acceptable to run in a disruption sensitive environment

may be changed if problems are found or better solutions are identified

Deploying implementation of such standard into the disruption sensitive environment is not recommended

6)

A proposed standard should have no known technical omission with respect to the requirement placed upon it. However IESG may waive this requirement in order to allow a specification to advance to the proposed standard state when it is considered to be useful & necessary (& timely) even with known technical omission.

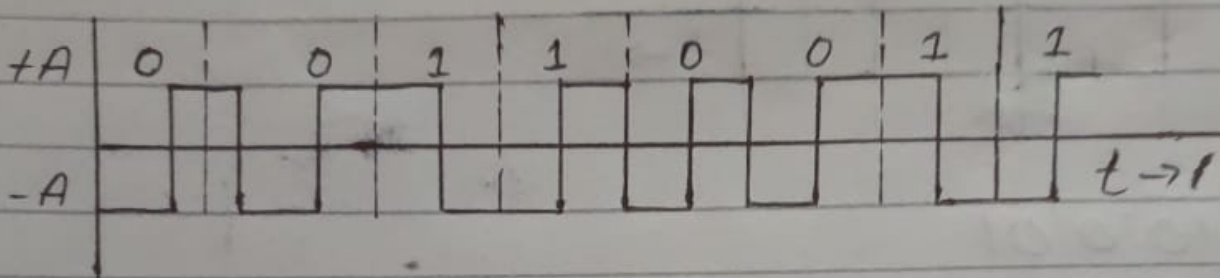
In cases in which one or more option or features have not been demonstrated in at least two interoperable implementation the specification may advance to the draft standard level only if those options are removed.

All features have been time tested.

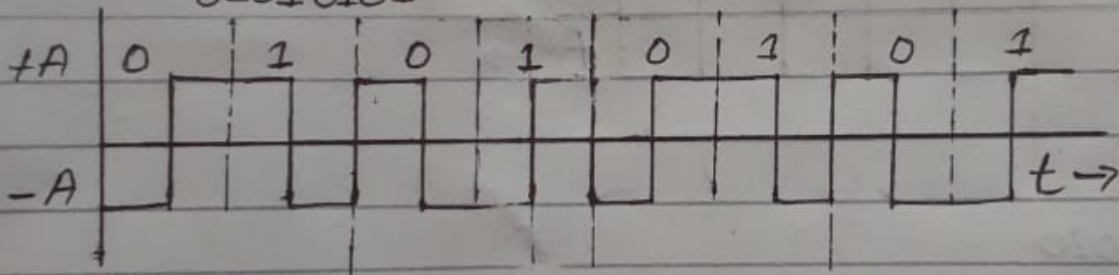
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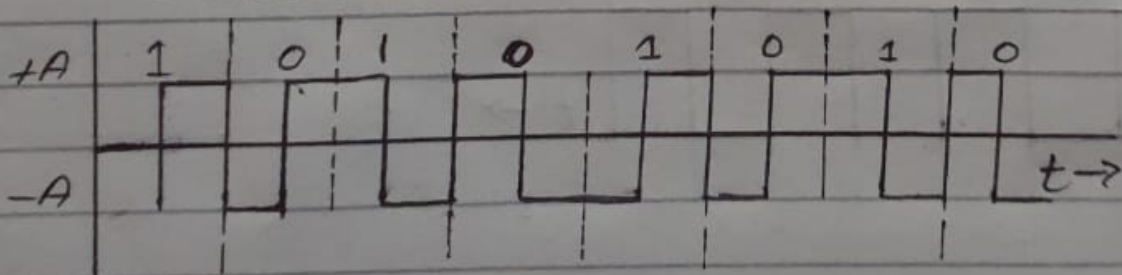
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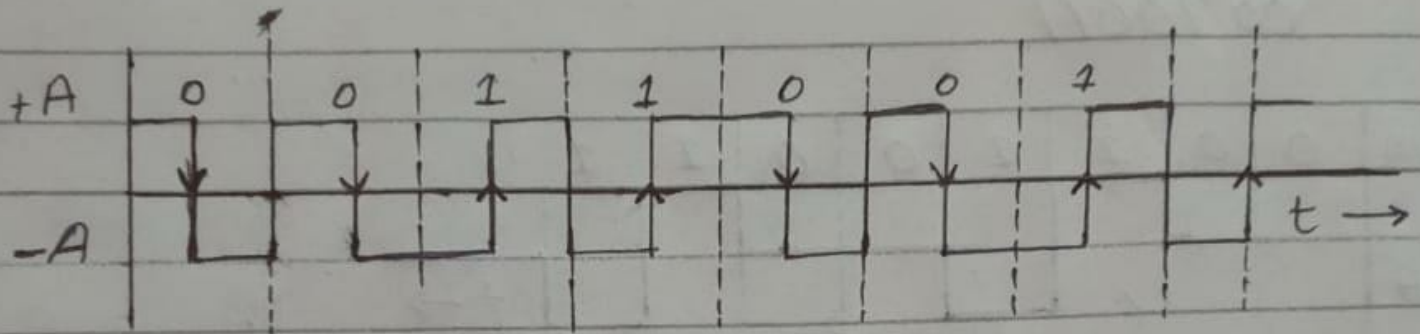
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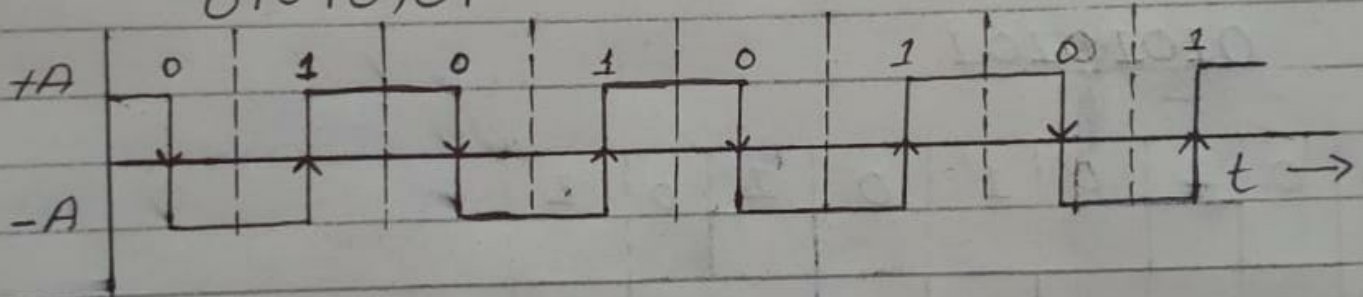
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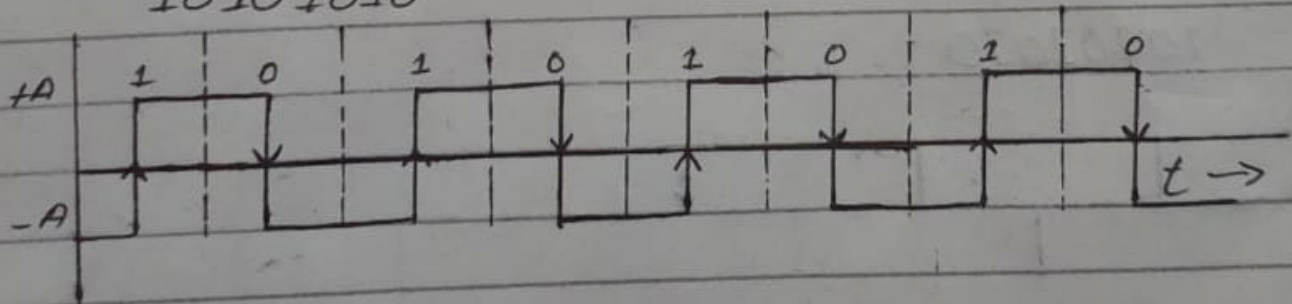
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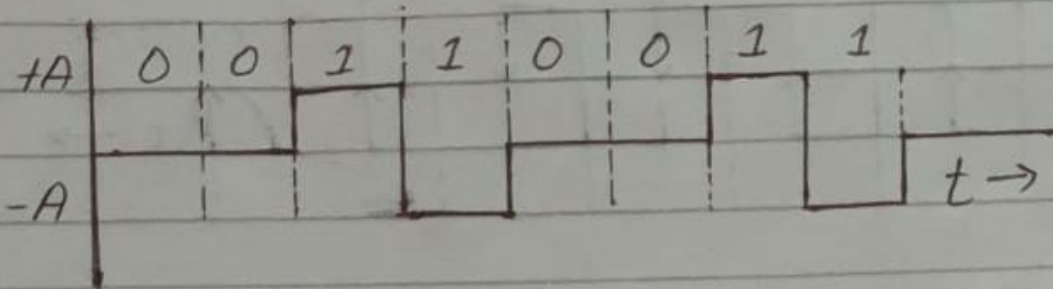
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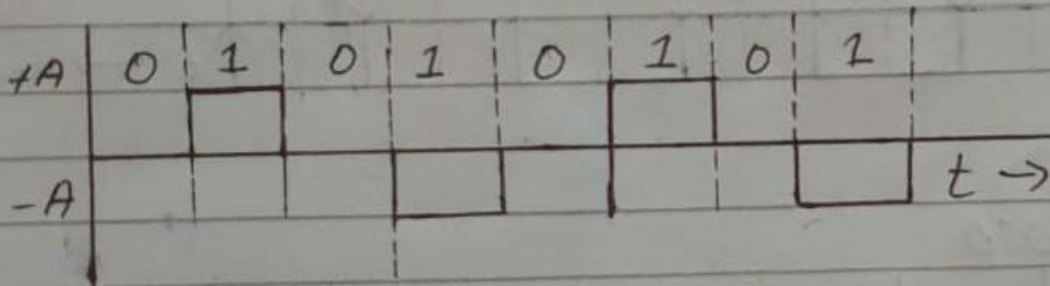
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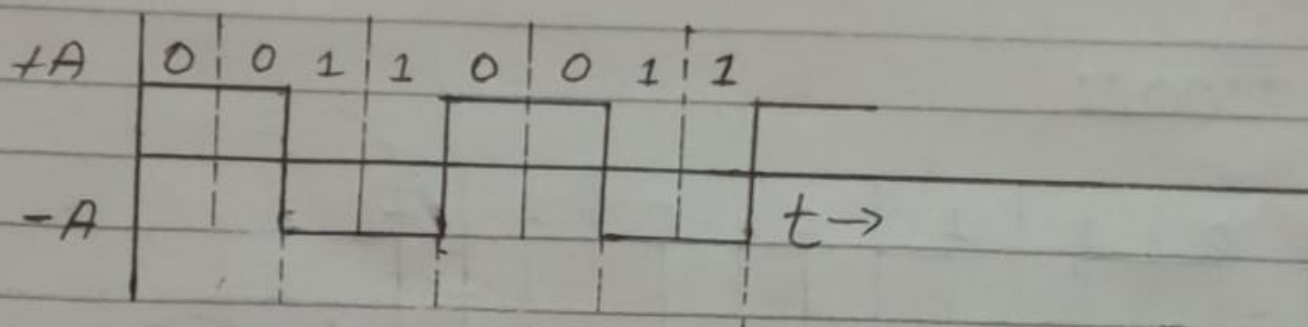




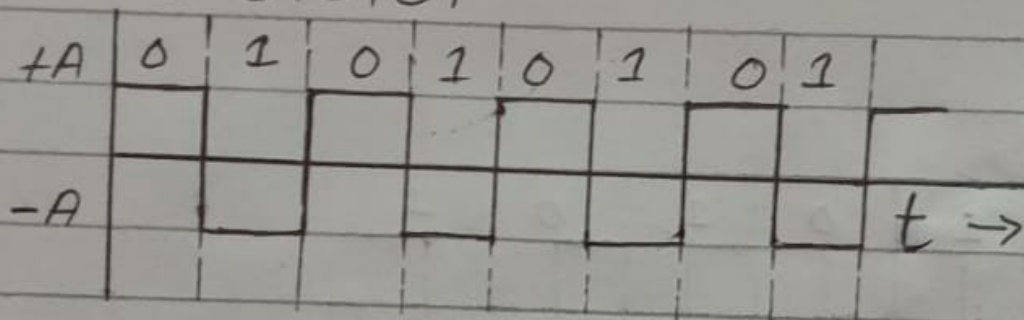
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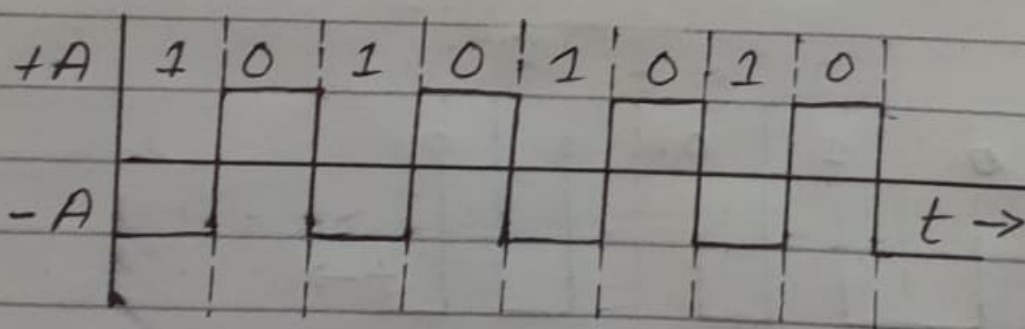
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QNO#3

You are working as a network Specialist in ABC organization. you are asked to do research on the current & future wireless networks issue & challenges?

\* Current wireless networks & challenges:-

\* physical object interference/design:-

The reliability of your wlan is heavily dependent on not only the architecture of your hardware & software but also the design & placement of the crucial piece of your network. So if you are getting spotty signal in certain parts of your wlan, make sure that your access points & routers are positioned optimally. walls, ceilings & other large objects can inhibit the reach of your wireless signal. Even things like metal filing cabinets can affect your wlan performance.

\* RF interference:-

802.11 technology has made the overall performance & reliability of wlan networks much more suitable for daily enterprise use. Despite this an invisible culprit often put a fork in the road regarding signal strength: radio frequency (RF) interference. RF interference can be caused by any device

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that emits electromagnetic signals. examples of device that emit these signals are:

- \* Mobile phones
- \* AM/FM radios
- \* Televisions
- \* Microwave ovens
- \* MRI machines
- \* Wifi routers
- \* The previously mentioned devices can be seen in almost any enterprise organization or large wlan networks. Due to underlying technology even 802.11n access points themselves can be a source of RF interference.

#### \* Hardware Architecture & Firmware:-

Hardware issues are another major contributing factor to poor wifi performance on large w lans. more specifically the two most common hardware issues we see affecting wlan performance are either having not enough or too many access points, or having outdated firmware. Deciding on the number of access points your network needs can be tricky. This design issue can be challenging for even the most seasoned wlan architects. Also power configuration & channel selection can make the architectural design making process more complex.

#### \* Security Consideration:-

Participants are also concerned with the security that surrounds the wireless

environment itself. In order to ease these concerns, they have implemented security protocols such as sign on. Another concern is stolen laptops. Some organizations are using centralized device software to quarantine lost or stolen devices & deny access to network.

#### \* Network management issues:-

The study suggests that ~~it~~ IT professionals get a good idea of whether they are successfully managing their wireless environment by the volume of help desk calls they receive. Some organizations are trying to identify problems before they come to attention of their users by implementing a formalized rounding program to survey staff about the issues they might be having & run reports on device.

#### Future wireless network challenges:-

1) One of the challenges for designers of wireless hardware is to enable terminals with multiple modes of operation to support different applications. Desktop computers currently have the capability of processing voice, image, text & video data for small, lightweight, handheld devices; however breakthroughs in circuit design will be necessary before multicode operation can be implemented. Because most people will not carry around

a 20-pound battery, the signal processing & communications hardware of portable terminals must consume very little power. Many of today's signal processing techniques that increase channel capacity and mitigate channel impairments require a lot of processing power.

2) Another major design challenge will be overcoming the capacity limits, interference level & random variation of the wireless channel. Significant breakthroughs have been made this in arena over the last decade, driven mainly by commercial cellular technology. These breakthrough include: multiple antennas at the transmitter & receiver to increase channel capacity, sophisticated coding strategies to correct channel induced bit errors; multi-user detection technique to reduce interference, equalization, Spread-Spectrum & multicarrier modulation to reduce self interference from signal reflections; adaptive modulation to optimize performance overtime varying channels.

3) Another significant challenge is that the network must be able to locate a given user among millions of mobile terminals & route a call to that user, which could be moving at speed of up to 100 mph. The finite resource of the network must

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allocated fairly infrastructure has been developed for wired networks: the telephone system, the internet & fiber optic cable, which should be able used to connect wireless system into a global network. However because wireless system with mobile users are not likely to be competitive with wired system in terms of data rate & reliability the design of protocols to provide interface between wireless & wired networks with vastly different performances capabilities remains a challenge.

4) wireless system must support wireless applications, which may have very different requirements (e.g. voice mail & email). it's impossible to design a "one-size-fits-all" wireless network that can support all of the applications that exists today, let alone applications that will evolve in the future. Moreover it's impossible to guarantee fixed performance metrics (e.g. data rate or a hard delay constraint) for a wireless network because of the underlying random channel & network dynamics. Thus wireless applications will have to be adapted to these dynamics to deliver the best end to end performance e.g. a wireless video application might require a data of 10 megabits per second for very high picture & sound fidelity. However if the underlying

network can't support ~~the~~ this rate, the resolution could be scaled back to a rate commensurate with system capabilities.

5) perhaps the most significant technical challenge to wireless network is an overhaul of design process itself. wireless links exhibits very poor performances, but this performance along with user connectivity & network topology, change over time. In fact the very notion of a wireless link is somewhat fuzzy because of the nature of radio propagation, & because of the dynamic nature & poor performance of the underlying wireless communication channel. High performances wireless system will have to be optimized for this channel & must adapt to its variations as well as to user mobility. Thus wireless system will require a tightly integrated & adaptive design that transcends hardware, link, network & application layers. Given the underlying constraints & dynamics of the channel & network, as well as the application requirements, each layer of the system design, as well as across layers, will have to adapt for the system to deliver the best end to end performance.