**Transmission switching and signaling Asfandyar safdar**

**BS telecom ID # 12982**

Question 1 [A]

Define the following equivalent:

27dBm=? DB

36dBw=? Watts

34dBm=? dBw

Ans…

1. 27dBm=dBw

Solve..

Given p(dBw)=p(dBm)-3=27-30=3dBw

1. 36dBw=watts?

Solve..

P(dBw)=P(1w)-3=36-30=60

1. 34dBm=dBw

Solve

P(dBw)=(dBm)-3=34+30=-3dBw

Question 1 [B]

A microwave transmitter has an output of 500 mW. What is its output in dBW? A combining network has two inputs:+29 dBm.It has an insertion loss of 3 dB.What is the combined output dBm?

Ans…

Solution…

1mw=0-001w=-30dBw

500mw=16.66 1w=-499.8dBw

Given..+29dBm and +6dBm

Insertion loss 3dB

To find output in dBm?

P(m

w)=1mw.10 p(dBm)10

P(mw)=1mw.10$29^{10}$

P(mw)=0.1mw+290=+60

P(mw)=290.1dBm+60 dBm

230.1dm/3dm

=76.7dBm

Question 2 [A]

In a traditional TDM system, four devices A B C,& D are transmitting data at the rates L,L,L & L kbps, respectively. What must be the minimum transmission rate of output stream of the multiplexor? If the TDM frame size is ‘M’ k-bytes, then with the help of diagram show generic technique to keep the frames synchronized between multiplexer and de-multiplexer .Draw the format of an ISD multiplexer frame.

Ans…

The simple PAM wave form for most of time.

Using the off period channel can be used to transmit sample of other wave form.

The concept of interfacing simple from survival signal into a single waveform is called TDM.

Question 2 [B]

Describe statistical TDM. How DWDM is different from WDM? Explain working of DWDM.

Ans...

* Working statistical TDM
* Sorting of DWDM.

The DWDM divided the light travelling through optical cable into different wave length.

* DWDM takes input optical signal and divided into different wavelength
* All these wave length are transmitted through some optical cable
* DWDM select wavelength in certain band it a around 1550mm and it is called window of DWDM.
* This using DWDM the different signal can travel indicator LANE where each independent
* WDM…

WDM is optical fiber communication wavelength division is a technology is a technology which multiplanes multiple optic carrier signal on single optical fiber using different of leaser light to carry different signal.

* DWDM

No optical on standard communication impulse more channel more closely spaces that WDM

* DWDM based network create a liner cost way to quickly respond to customer bandwidth standard protocol charge.
* Key advantages to DWDM is that it is protocol and bit rate independent.

Question 2 [C]

What is PBX? What is its function? Draw PBX Architecture Diagram. What is an IP PBX & it differs from a normal PBX. Discuss the Different services that can be provided by an IP PBX.

Ans…

* Function of PBx
* PBx is a switch station for telephone system it consist of mainly & survival branches of telephones system and its switches connection to know and probably has not been reached.
* The different services provided by a PBx and IP Pbx
* PBx=Communication internally and externally within a computing externally or externally organization using a different channel like voice and over IP ISDN or analog.
* IP PBxcall between VoIP user on local line while allowing all user to shares and from them there by linking phone lines.

Question 3 [A]

Elaborate at least three speech coding. What advantages nonlinear encoding has over liner encoding? How nonlinear encoding is implementing in practical system?

Ans..

1. Three speech coding scheme are wave from order
2. Vocoder.

Synthase voices Example :CPC

3. Hybrid orders liners wave from approximately with synthesis voice

4. Non liner vs linear coding output…

Question 3 [B]

A mobile station [MS] is in idle mode and wants to originate a cell, however it does “have a physical channel for communication with the base station .How communication with the base station. How communications take place between MS and the base station?

Ans…

Mobile station equipment such as cell phone sim card etc. and software needed from communication with a GSM network. The four main components of GSM station are terminal

Equipment in any devices connected to the mobile station which offers services to user such as mobile phone and mobile devices.

Base station....

* Relay located at the center of any cellular Telephone system
* A sort range which connect a cordless phone or other wireless devices to a central hub and allow connecting to a network

Question 3 [C]

Explain in detail Incoming Traffic and Services time characterization.

Ans…

µk=0 li all k

Ʌu=Ʌ li all k

The system begins with the zero meters

Pk(0) =$\begin{matrix}1&k=0\\0&k\ne 0\end{matrix}$

Dp(t)/ dt = - p(t) + µ1p1 (t)

Dp (t)dt = -Ap(t)

Dp(t)dt= Ʌp(t)

Dpk (t )dt =Ʌpk (t) +Ʌpk -1(t)

Solution for p0(t)

p. (t) =$e^{-xt}$

For k=1

 dp1 (trdt=-Ʌp1 (t) +Ʌ0 (t)

=t-Ʌp1(t)+ Ʌe-Ʌt

For k > 0,t>0

Pk(t)=( Ʌ+)k/k1e-kt

Poison distribution