University of Mumbai
Examination 2020 under cluster 4 (PCE)

Program: BE Electronics and Telecommunication Engineering
Curriculum Scheme: R2012
Examination: Final Year Semester VIII
Course Code: ETE801 and Course Name: Speech Processing

Time: 1 hour   Max. Marks: 50

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Note to the students:- All the Questions are compulsory and carry equal marks .

Q1.	Which of the following is true for the narrow band spectra?
Option A:	Time resolution low, frequency resolution high
Option B:	Time resolution high, frequency resolution low
Option C:	Time resolution high, frequency resolution High
Option D:	Time resolution Low, frequency resolution low
Q2.	Unvoiced segment has
Option A:	Less energy
Option B:	Less variation
Option C:	Less periodicity
Option D:	Less importance
Q3.	Which of the following pair of tones is perceived as louder tone? a) 25dB level at 300Hz and 25 db at 800 Hz (b) 5dB level at 3 KHz and 5dB level at 1 KHz.
Option A:	5dB level at 1 KHz, 25 db at 800 Hz
Option B:	25dB level at 300Hz and 25 db at 800 Hz
Option C:	5dB level at 3 KHz, 25dB level at 300Hz
Option D:	5dB level at 3 KHz and 5dB level at 1 KHz
Q4.	The rate of speaking for most people is about-------symbols per second
Option A:	15
Option B:	10
Option C:	20
Option D:	30
Q5.	Begins at the velum and ends at the nostrils
Option A:	Vocal tract
Option B:	Nasal Tract
Option C:	Velum
Option D:	Glottis
Q6.	A trapdoor-like mechanism at the back of the mouth cavity
Option A:	Vocal tract
Option B:	Nasal Tract
Option C:	Velum

Option D:	Glottis
Q7.	Which of the following is not a Voiced stops
Option A:	D
Option B:	B
Option C:	P
Option D:	G
Q8.	Which are the voiced consonants in the word "BHARATH"
Option A:	Only /b/
Option B:	/b/ and /th/
Option C:	Only /r/
Option D:	/r/ and /b/
Q9.	Properties of the speech signal change relatively slowly with time ....
Option A:	(10-15 sounds per second)
Option B:	(5-10 sounds per second)
Option C:	(20-30sounds per second)
Option D:	7-8 sounds per second
Q10.	for unvoiced speech, energy is mainly above
Option A:	1KHz
Option B:	1.5 kHz
Option C:	2KHz
Option D:	3KHz
Q11.	Full form for AMDF is
Option A:	Average Magnitude Difference Function
Option B:	Amplitude Modulation Difference Function
Option C:	Average Magnitude Differential Function
Option D:	Average Magnitude Difference Functionality
Q12.	Narrow bandpass filters (45 Hz bandwidth) provide good frequency resolution and poor time resolution (resolve pitch pulses in frequency, but not in time)—called .....
Option A:	wideband spectrogram
Option B:	narrowband spectrogram
Option C:	narrow filters
Option D:	wide filters
Q13.	Integer multiple of fundamental frequency 18 integer multiple of fundamental frequency
Option A:	Harmonic
Option B:	rahmonic
Option C:	filtering
Option D:	liftering
Q14.	Linear operation on time signal

Option A:	filtering
Option B:	liftering
Option C:	Quefrency
Option D:	frequency
Q15.	Inverse Fourier transform of log spectrum
Option A:	Spectrum
Option B:	Cepstrum
Option C:	Analysis
Option D:	Alanysis
Q16.	Which of the following statement is not true for LPC coding
Option A:	LPC methods are the most widely used in speech coding
Option B:	LPC methods are the most widely used in speech synthesis
Option C:	LPC methods are the most widely used in Sampling
Option D:	LPC methods are the most widely used in speech recognition
Q17.	How LP residual is computed from the LP coefficients
Option A:	By inverse filtering of speech using LP coefficients.
Option B:	By LP filtering of the speech using LP coefficients.
Option C:	By low-pass filtering of speech using the LP coefficients.
Option D:	By high pass filtering of speech using LP coefficients
Q18.	How the pitch is computed by the LP analysis
Option A:	From the autocorrelation of LP residual.
Option B:	From the LP spectrum.
Option C:	From the autocorrelation of the LP spectrum.
Option D:	From the cross correlation of the LP residual with the speech signal
Q19.	To which of the following domains the term "quefrency" is related?
Option A:	Time domain.
Option B:	Frequency Domain
Option C:	Phase
Option D:	*TIME-frequency domain.*
Q20.	In which domain the LP analysis deconvolve the speech into excitation and vocal tract components
Option A:	Frequency domain.
Option B:	Time domain.
Option C:	Quefrency domain.
Option D:	Time-frequency domain.
Q21.	Which specifies the prior probability of each utterance?
Option A:	Sound model
Option B:	Model
Option C:	Language model
Option D:	All of the mentioned

Q22.	How does the state of the process is described in HMM?
Option A:	Literal
Option B:	Single random variable
Option C:	Single discrete random variable
Option D:	Frames
Q23.	What is the difference between semi vowels and vowels
Option A:	Semi vowels are weakly periodic compared to vowels
Option B:	Semi vowels are unvoiced but vowels are voiced
Option C:	All semivowels are aspirated but vowels are unaspirated
Option D:	Vowels are unvoiced and semivowels are voiced
Q24.	What is the difference between velar consonants /kh/ and /g/
Option A:	/kh/ is unvoiced and aspirated sound whereas /g/ is voiced-unaspirated
Option B:	/kh/ is voiced and aspirated sound whereas /g/ is voiced-unaspirated
Option C:	/kh/ is voiced and un aspirated sound where as /g/ is voiced-aspirated
Option D:	/kh/ is unvoiced and aspirated sound where as /g/ is uvoiced-unaspirated
Q25.	Which among the following are the major difference between a fricative sounds and vowels
Option A:	Amplitude of fricative is greater than that of vowel
Option B:	Energy of fricatives are less than vowels.
Option C:	Spectral shape is different in vowels as compared to fricatives
Option D:	Vowels are periodic where as fricatives are like turbulent noise

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Question	Correct Option (Enter either 'A' or 'B' or 'C' or 'D')
Q1.	A
Q2.	A
Q3.	D
Q4	B
Q5	B
Q6	C
Q7	B
Q8.	A
Q9.	B
Q10.	B
Q11.	A
Q12.	B
Q13.	A
Q14.	A
Q15.	B
Q16.	C
Q17.	A
Q18.	A
Q19.	A
Q20.	C
Q21.	C
Q22.	C
Q23.	A
Q24.	A
Q25.	D