Total No. of Pages: 2

II Semester B.A. SLP Examination, May/June - 2025 (Scheme: NEP)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY

Speech & Hearing

Speech-Language Pathology: Assessment and Management

Time: 21/2 Hours

Max. Marks: 60

Instruction: Answer all the questions.

- I. 1. a) Explain the process of clinical interview as an effective method of obtaining case history. Outline the do's and dont's of clinical interview. [10]
 - b) List the characteristics of a good diagnostic clinician. [5]

OR

- 2. a) Describe the different diagnostic tools used in speech-language pathology. [10]
 - b) What are the challanges in the assessment of speech and language disorders in geriatrics? [5]
- II. 3. Explain the speech and Language Processing Model. Highlight on its applications in the diagnosis of speech and language disorders. [15]

- 4. a) Enumerate on the different types of diagnoses with suitable examples. [10]
 - b) List the applications of Bloom and Lahey's model with specific reference to a child with specific language Impairment. [5]

III 5. a) Compare and contrast individual and group therapy. Discuss the pros and cons of group therapy in the context of children with Autism Spectrum Disorders. [10]

b) Write a note on social interactionist approach to speech and language therapy. [5]

OR

- 6. a) What are the types of telepractice? Explain the benefits and barriers of implementation of telepractice in speech language pathology.[10]
 - b) Explain the process of selecting appropriate intervention targets based on normative strategy. [5]
- IV. 7. a) Elaborate on the essential components of a Lesson Plan. Prepare a model lesson plan for 3 months of speech and language therapy suitable for a 4 years old child with Spoken Language Disorder secondary to Mild Intellectual Disability? [10]
 - b) Describe any one treatment technique for Development Speech Fluency Disorder. [5]

- 8. a) Explain the different types of clinical records. [10]
 - b) Write a note on evaluation of therapy outcome in speech and language disorders. [5]



Total No. of Pages: 2

II Semester I Year B.A. SLP Examination, May/June - 2025 (Scheme: NEP)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY

Speech & Hearing Audiological Evaluation

Tim	e:2	½ Ho	ours .	Max. Marks : 60)
Inst	ructio	on:	Answer all the questions.		
I.	1.	a)	Explain the parts of an Audiometer with a neat labe	elled diagram.[10]
		b)	What are the limitations of pure Tone Audiometry	? [5]
			OR		
	2.	a)	What are the challenges in bone conduction testin	g? [7]
		b)	What is the usefulness of audiogram?	[8]]
II.	3.	Wri	ite short notes on :		
		a)	PIPB function.	[5]
		b)	Uncomfortable loudness level.	[5]
		c)	Speech Identification scores.	[5]
			OR		
	4.	Wh	at are the factors that affect speech Audiometry?	[15]
Ш	5.	Wri	ite short notes on:		
		a)	Rainville test	[5]
		b)	Fusion Inferred test	[5]
		c)	Interaural attenuation	[5	1

51	2	17
74	. 7	L

- 6. a) Describe the criteria and procedure for obtaining masked air conduction threshold. [10]
 - b) Explain briefly on the different types of maskers. [5]
- IV. 7. a) Explain the procedure for calibrating the output intensity through headphones with a neat labelled block diagram. [10]
 - b) What is the purpose of calibrating an audiometer. [5]

- 8. a) Explain the different procedure involved in the subjective calibration of headphones. [10]
 - b) Write a note on Artificial mastoid. [5]



Total No. of Pages: 2

-II Semester I Year B.ASLP Examination, May/June - 2025

(Scheme: NEP)

SPEECH & HEARING

Audiology Speech Language Pathology

Linguistics and Phonetics

Time: 21/2 Hours Max. Marks: 60 All questions are compulsory. Instruction: I) Explain the functions of language. 1) a) [8] b) Write a note on language families of India. [7] OR Explain about transcription systems with special note on International 2) a) phonetic alphabet. [10]List different branches of linguistics & define each. b) [5] Write note on $[3 \times 5 = 15]$ II) 3) Inflection and derivation a) Bound and free morphemes b) Paradigmatic and syntagmatic relationship c) OR Explain about different types of sentences. 4) a) [10]What are endocentric and exocentric constructions? b) [5] Explain about classification of consonants. III) 5) [8] a) Write a note on principles and practices of phonemic analysis. [7] b)

	6) 	a)	What are phonological processes, explain any four phonologrocesses with examples?	gical [10]
		b)	Briefly explain about articulatory and acoustic phonetics.	[5]
IV)	7)	a)	Write a note on stages of language development.	[10]
		b)	Briefly explain about first & second language acquisition.	[5]
			· OR	
	8)	a)	List & explain factors influencing second language acquisition	.[10]
		b)	Write a note on prelinguistic stage of language development.	[5]



Total No. of Pages: 2

II Semester I B.A. SLP. Examination, May/June - 2025 (Scheme: NEP)

SPEECH AND HEARING

Audiology Speech Language Pathology Otolaryngology

			Otolaryngology	
Tim	e: 2	½ Ho	ours Max. Marl	ks: 60
Inst	ructi	on:	Answer all the questions.	
I.	1)	a)	Describe the anatomy of middle ear.	[10]
		b)	Explain the congenital anomalies of the external ear.	[5]
			OR	
	2)	Wri	te a short note on :	
		a)	Chronic suppurative otitis media	[10]
		b)	Eustachian tube dysfunction	[5]
II.	3)	a)	Explain the etiology, signs, symptoms and management of me disease.	niere's
		b)	Write a short note on vestibular Sehwannoma.	[5]
			OR	
	4)	a)	Explain the etiology, signs, symptoms and management of ototo	oxicity.
		b)	Port surgical care and complication of surgery for cochlear im-	plants. [5]
III.	5)	a)	Describe the anatomy and physiology of pharynx.	[8]
		b)	Explain the inflammatory conditions of the pharynx and tous	ils.[7]
	(6)		OR	
	6)	a)	Describe the medical aspects of cleft lip and palate.	[8]
		b)	Explain the congenital and acquired diseases of the esophag	us. [7]
		-5-		

54	31	4		MP-339
IV.	7)	a)b)c)	Differentiate between adult and infant larynx. Write a note on Stroboscopy. Write a note on congenital anomalies of the larynx. OR	[5] [5]
	8)	Writ	e short notes on :	
		a)	Vocal nodules	[5]
		b)	Tumors of the larynx	[5]
	٠	c)	Phonosurgery	[5]

Total No. of Pages: 2

II Semester B.ASLP. Examination, May/June - 2025

(Scheme: NEP)

SPEECH & HEARING

Audiology Speech Language Pathology

Pediatrics & Genetics

Tim	e:2	Hours Max. Marks: 30
Inst	ructi	on: Answer all questions
1.	a)	Describe the differences between Mitosis and Meiotic cell division.
		[4]
	b)	Write brief note on Structural Aberrations. [3]
		OR
	c)	What is a syndrome and explain the following syndromes in detail:
		[7]
		i) Down Syndrome
	550	ii) Edward's Syndrome
2.	a)	Describe the scope of molecular genetics and its application in the field
		of communication disorders. [8]
		OR.
	b)	Mention different sources of genetic material in humans through which
		DNA can be isolated. [4]
4	c)	Explain Gene Cloning with an example? [4]
3.	a)	What is difference between Monogenic (Mendelian) and Polygenic
		disorders? Give one example for each. [4]
	b)	Write the methods and significance of Genetic Counselling? [3]
		OR
	c)	Discuss in brief about Autism Spectrum Disorders and explain different
	1.50	identified genes involved in ASD. [4]
	d)	Describe in detail about management of genetic disorders? [3]

4.	a)	Describe growth in humans from birth to puberty.	[4]
	b)	Mention different milestones of growth during adolescent period.	[4]
		OR "	
	a)	Write short notes on fat soluble vitamins and mention various some	rces

- a) Write short notes on fat soluble vitamins and mention various sources of these vitamins. [4]
- b) What is protein energy malnutrition. Write difference between Kwashiorkor and Marasmus. [4]



Sl. No. 0085

Total No. of Pages: 2

II Semester I B.ASLP Examination, May/June - 2025 (Scheme: NEP)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY SPEECH & HEARING

English for Work and Career

Time: 21/2 Hours

Max. Marks: 60

I. Answer ten of the following questions:

 $[10 \times 2 = 20]$

- 1. Define the administrative duties of Front Desk management.
- 2. Write a short note on Intonation.
- 3. How does fluency contribute to effective communication?
- 4. How can one ensure that a guest is warm welcomed?
- 5. What do you mean by Dining Etiquette?
- 6. Give an example how to handle guest complaint effectively.
- 7. What is an open ended and close ended question?
- 8. What is the significance of cross cultural communication?
- 9. Write any two uses of visual aid in presentation?
- 10. What distinguishes an occasional speech from other types of speeches?
- 11. What does the the term "vote of thanks" entail?
- 12. Define the term 'Voice Modulation'.

II. Answer four of the following:

 $[4 \times 5 = 20]$

- 13. What are the strategies used in front desk management?
- 14. How do you deal with complaints? Give examples.
- 15. Bringout the key aspect of etiquette.
- 16. Explain the concept of occasional speech and theme speech.
- 17. What roles does Intonation play in facilitating effective communication?

III. Answer two of the following:

 $[2 \times 10 = 20]$

- 18. What strategies can individual employ to enhance their vocabulary development for better communication?
- 19. Discuss the various responsibilities of front desk management.
- 20. How can language barriers impact effective communication in diverse settings?





Total No. of Pages: 1

II Semester IYear B.ASLP Examination, May / June - 2025

(Scheme: NEP)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY SPEECH AND HEARING

Environmental Studies

Tim	Time: 2 Hours Max. Marks					
Inst	ructi	on: Draw diagrams wherever necessary.				
I.	1.	Discuss the multi disciplinary Nature of environmental studies.	. [10]			
		OR				
	2.	Describe the structure and functions of Ecosystem.	[10]			
II.	3.	Explain the conservation methods of Biodiversity.	[10]			
		OR				
	4.	Brief up the Bio-geographical zones of India.	[10]			
v						
III.	5.	Write a short note on Disaster management.	[5]			
		OR				
	6.	Give an account on land degradation.	[5]			
IV.	7.	Environmental Protection Act.	[5]			
		OR				
	8.	Need for public awareness in conservation of Environment.	[5]			

52566

MP-677

Sl.No. 0051

Total No. of Pages: 4

II Semester B.A./B.Sc./B.Com. Examination, May/June - 2025

(Scheme: NEP)

HUMAN DEVELOPMENT AND FAMILY STUDIES

Childhood Behavioural Problems (OE)

Time: 21/2 Hours

Max. Marks: 60

Instruction: Answer all Sections.

ಎಲ್ಲಾ ವಿಭಾಗಗಳಿಗೂ ಉತ್ತರಿಸಿ.

SECTION - A

<u>ವಿಭಾಗ – ಎ</u>

I. Answer any eight of the following: ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಎಂಟು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. $[8 \times 2 = 16]$

- Q1) Mention the Childhood Years. ಬಾಲ್ಯದ ಅವಧಿಯನ್ನು ತಿಳಿಸಿ.
- Q2) Describe Kleptomania. ಕ್ಲೆಪ್ಟೋಮೋನಿಯಾವನ್ನು ವಿವರಿಸಿ.
- Q3) Define behavioural problems. ವರ್ತನೆಯ ಸಮಸ್ಯೆಗಳನ್ನು ವ್ಯಾಖ್ಯಾನಿಸಿ.
- Q4) Explain the types of emotions with examples. ವಿವಿಧ ರೀತಿಯ ಭಾವನೆಗಳನ್ನು ಉದಾಹರಣೆಯೊಂದಿಗೆ ವಿವರಿಸಿ.

- Q5) Mention the causes for disturbed sleep. ತೊಂದರೆಗೊಳಗಾದ ನಿದ್ರೆಗೆ ಕಾರಣಗಳನ್ನು ತಿಳಿಸಿ.
- Q6) Mention the advantages of school counselling.
 ಶಾಲಾ ಸಮಲೋಚನೆಯ ಪ್ರಯೋಜನಗಳನ್ನು ಉಲ್ಲೇಖಿಸಿ.
- Q7) What are internalizing problems? ಆಂತರಿಕ ಸಮಸ್ಯೆಗಳು ಯಾವುವು?
- $\it Q8$) List the causes for externalizing problems. ಬಾಹ್ಯ ಸಮಸ್ಯೆಗಳಿಗೆ ಕಾರಣಗಳನ್ನು ಪಟ್ಟಿಮಾಡಿ.
- Q9) Mention the developmental task of childhood years. ಬಾಲ್ಯದ ಬೆಳವಣಿಗೆಯ ಕಾರ್ಯಗಳನ್ನು ಉಲ್ಲೇಖಿಸಿ.
- *Q10)*List the emotional behaviour of childhood years. ಬಾಲ್ಯದಲ್ಲಿ ಭಾವನಾತ್ಮಕ ನಡವಳಿಕೆಯನ್ನು ಪಟ್ಟಿಮಾಡಿ.

SECTION - B

<u>ವಿಭಾಗ – ಬಿ</u>

II. Answer any six of the following : ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಆರು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ. $[6 \times 4 = 24]$

- Q11)Explain the significance of childhood years. ಬಾಲ್ಯಾವಸ್ಥೆಯ ಅನುಕೂಲಗಳನ್ನು ವಿವರಿಸಿ.
- Q12)How can school manage problematic children? Explain. ತೊಂದರೆ ಕೊಡುವ ಮಕ್ಕಳನ್ನು ಶಾಲೆಯಲ್ಲಿ ಹೇಗೆ ನಿಭಾಯಿಸುತ್ತಾರೆ? ವಿವರಿಸಿ.

Q13) Discuss the school setting for children.

ಮಕ್ಕಳಿಗಾಗಿ ಶಾಲೆಯ ವ್ಯವಸ್ಥೆಯನ್ನು ಚರ್ಚಿಸಿ.

Q14) Describe the cause and remedies of thumb sucking in children.

ಹೆಬ್ಬೆರಳು ಚೀಮವ ಮಗುವಿನ ಕಾರಣ ಮತ್ತು ಪರಿಹಾರವನ್ನು ವಿವರಿಸಿ.

Q15) Write a note on causes for stealing and lying behaviour among children.

ಮಕ್ಕಳ ಕಳ್ಳತನ ಮತ್ತು ಸುಳ್ಳು ಹೇಳುವಿಕೆಯ ನಡವಳಿಕೆಯ ಕಾರಣದ ಬಗ್ಗೆ ಟಿಪ್ಪಣಿ ಬರೆಯಿರಿ.

Q16) Explain the consequences and management of externalizing problems.

ಬಾಹ್ಯಕರಣದ ಸಮಸ್ಯೆಯ ಪರಿಣಾಮಗಳು ಮತ್ತು ನಿರ್ವಹಣೆಯನ್ನು ವಿವರಿಸಿ.

Q17)Discuss about Bed wetting and running away children from home.

ಹಾಸಿಗೆಯಲ್ಲಿ ಒದ್ದೆ ಮಾಡುವ ಮತ್ತು ಮನೆಯಿಂದ ಓಡಿ ಹೋಗುವ ಮಕ್ಕಳ ಬಗ್ಗೆ ಚರ್ಚಿಸಿ.

Q18) Explain the role of counsellors in dealing problematic children.

ತೊಂದರೆ ಕೊಡುವ ಮಕ್ಕಳಿಗೆ ಆಪ್ತ ಸಮಾಲೋಚನೆಯ ಪಾತ್ರವನ್ನು ವಿವರಿಸಿ.

SECTION - C

ವಿಭಾಗ – ಸಿ

III. Answer any two of the following:

 $[2\times10=20]$

ಕೆಳಗಿನ ಯಾವುದಾದರೂ ಎರಡು ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿ.

Q19) Explain the role of parents and family members in dealing with problematic children.

ಸಮಸ್ಯಾತ್ಮಕ ಮಕ್ಕಳೊಂದಿಗೆ ವ್ಯವಹರಿಸುವಾಗ ಪೋಷಕರು ಮತ್ತು ಕುಟುಂಬದ ಸದಸ್ಯರ ಪಾತ್ರವನ್ನು ವಿವರಿಸಿ.

Q20) Explain developmental delay childhood years.

ಬಾಲ್ಯಾವಸ್ಥೆಯ ವರ್ಷಗಳಲ್ಲಿ ಬೆಳವಣಿಗೆಯ ವಿಳಂಬವನ್ನು ವಿವರಿಸಿ.

Q21)Discuss the behavioural management strategies and Techniques.

ವರ್ತನೆಯ ನಿರ್ವಹಣೆಯ ತಂತ್ರಗಳ ಬಗ್ಗೆ ಚರ್ಚಿಸಿ.

Q22)Discuss emotional and social behaviours during early childhood years.

ಬಾಲ್ಯದ ವರ್ಷಗಳಲ್ಲಿ ಭಾವನಾತ್ಮಕ ಮತ್ತು ಸಾಮಾಜಿಕ ನಡವಳಿಕೆಯನ್ನು ಚರ್ಚಿಸಿ.



Total No. of Pages: 2

II Semester I Year B.A SLP Examination, May/June - 2025 (Scheme: CBCS)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY SPEECH & HEARING

Speech-Language Pathology: Assessment & Management

Time: 3 Hours Max. Marks: 80

Instruction: Answer all questions.

- I. 1. a) Describe an effective diagnostic setting and relevent diagnostic tests for assessing Speech and Language delay in pre-school aged children. [10]
 - b) List the general principles of diagnosis in Speech-Language Pathology. [10]

OR

- 2. a) What are the key characteristics in the case history for fluency disorders? [10]
 - b) What are the essential factors to consider in the case history form for adults with voice disorders? [10]
- II. 3. a) Explain how Spoken Language Processing Model (SLPM) guide Speech and Language assessment. [12]
 - b) What are the advantages and disavantages of the following diagnostic types;
 - i) Diagnosis by treatment.

[4]

ii) Instrumental diagnosis

[4]

OR

- 4. a) Describe input and output transmission functions in Wepman's model and write the role Wepman's model in clinical decision making. [12]
 - b) Write a note on:

 $[2 \times 4 = 8]$

- i) Team diagnosis
- ii) Differential diagnosis

- III 5. a) What are the benefits of Tele-practice in Speech-Language Pathology service delivery? [10]
 - b) Write a note on

 $[2\times 5=10]$

- i) Developmental strategy in speech-language therapy.
- ii) Individual specific strategy in speech-language therapy.

OR

- 6. a) How will you create an engaging and effective speech & language therapy setup for children with language disorders. [10]
 - b) How will you apply the following models to speech-language therapy; $[2 \times 5 = 10]$
 - i) Medical model
 - ii) Behavioural model
- IV. 7. a) Write a lesson plan including TWO goals, relevant activities, and techniques for children with spoken language disorder. [8]
 - b) Write short notes on:

 $[3\times 4=12]$

- i) Vocal hygiene
- ii) Open mouth approach
- iii) Twin taking behaviour

OR

- 8. a) Explain any THREE speech & language stimulation techniques for children with spoken language disorder with suitable examples.[12]
 - b) Briefly discuss the significance of documentation of clinical records.

[8]



Sl.No. 0001

Total No. of Pages: 2

II Semester I Year B.ASLP. Examination, May/June - 2025 (Scheme:CBCS)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY SPEECH AND HEARING

			Audiological Evaluation
Tim	ie:3	Hou	Max. Marks: 80
Inst	ructi	on:	Answer all questions.
I.	1.	a)	What is the importance of bone conduction Audiometry? Describe the challenges in bone conduction testing. [10]
		b)	Write short notes on B71 and TDH - 39. [10]
			OR
	2.	a)	Describe the Hughson and Westlake method and its modification with examples. [15]
		b)	What are the advantages of using insert receivers in Audiometry. [5]
II.	3.	a)	Discuss various factors that affect speech Audiometry. [15]
		b)	Write a short note on Bone conductor speech Audiometry. [5] OR
	4.	a)	Explain in detail about speech Recognition Threshold. [10]
	•	b)	Describe PI-PB function in detail. [10]
III.	5.	a)	Explain cross over, cross hearing and shadow curve with examples. [10]
		b)	Explain occlusion effect. What is its importance in clinical masking? [10]

Mo of correlian. One

P.T.O.

OR

6	a) .	Describe the	e criteria	and	procedure	for	obtaining	masked	bone
		conduction	threshold	s.				•	[10]

b) Describe in detail about SAL test.

[10]

IV. 7. a) Write short notes on Artificial ear and Artificial mastoid. [10]

b) Explain the procedure involved in objective calibration of pure tones presented through loudspeaker. [10]

- 8. a) Describe various procedures involved in subjective calibration of headphones for pure tones. [10]
 - b) With the help of a neat labelled block diagram, explain how would you objectively calibrate output from a bone vibrator. [10]



Total No. of Pages: 2

II Semester I B.A SLP Examination, May/June - 2025

(Scheme: CBCS)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY SPEECH & HEARING

			Linguistics and Phonetics	94
Tim	ie:3	Hou	rs Max. Marks:	: 80
Instruction:			Answer all the questions.	
I.	1.	a)	Define Language? Write the characteristics and functions of langua	age? [10]
		b)	Explain the writing systems? OR	[10]
	2.	a)	Define Linguistics? Write the different branches of linguistics v	with [15]
		b)	Short notes on International Phonetic Alphabet.	[5]
II.	3.	a)	Write differences between deep vs surface structure and language parole.	e vs [8]
		b)	Write short notes on pragmatics.	[8]
	×	c)	Explain endocentric and exocentric constructions with examples OR	?[4]
	4.	a)	Write short notes on semantics?	[8]
		b)	Explain the concept word formation, inflection and derivary morphemes with examples?	tion [7]
		c)	Write a note on Immediate constituent analysis?	[5]
ш	5.	a)	Write short notes on stress aspects of supra-segmentals vexample?	with [7]
		b)	Write the classification of Consonants.	[7]
		, c)	Define phonological processes and its classification with examp	les? [6]

	6.	a)	Write in detail the vowel classification with examples?	[8]
		b)	Write short notes on Intonation aspects of supra-segmentals examples.	with [6]
		c)	Explain SODA error analysis in phonology with examples.	[6]
IV.	7.	a)	Define Bilingualism in children and types of bilingualism examples.	with [10]
		b)	Note on acquisition of syntax in children.	[5]
		c)	Write the factors influencing second language acquisition / learn	ning. [5]
			OR	
	8.	Wri	te short notes for:	
		a)	Language transfer and linguistic interference?	[5]
		b)	Issues in second language acquisition	[5]
		c)	Acquisition of pragmatics in children	[5]
		d)	Prelinguistic stage vs linguistic stage in language development.	[5]
			· · · · · · · · · · · · · · · · · · ·	

Total No. of Pages: 2

II Semester B.A SLP Examination, May/June - 2025

(Scheme: CBCS)

AUDIOLOGY SPEECH LANGUAGE PATHOLOGY SPEECH & HEARING

Pediatrics and Genetics

Time: 2 Hours			Max. Marks: 40	
ructi	on:A	Answer all the questions.		
1.	a)	Describe the difference between mitosis and meiosis.	[5]	
	b)	Write a note on numerical aberrations of chromosomes.	[5]	
		OR		
2.	a)	What is a pedigree chart? Explain with an example.	[5]	
	b)	Write a note on sex chromosome anomalies.	[5]	
3.	a)	Describe Chorionic Villus sampling.	[5]	
	b)	Describe the Karyotyping.	[5]	
		OR		
4.	a)	Explain Amniocentesis.	[5]	
	b)	Explain FISH technique.	[5]	
5.	a)	Write short notes on gene therapy.	[5]	
	b)	Write short notes on human genome mapping project.	[5]	
		OR	,	
6.	a)	Describe the genetic basis of hearing impairment.	[5]	
	b)	Describe the genetic basis of dyslexia.	[5]	
	1. 2. 3. 4. 5.	1. a) b) 2. a) b) 3. a) b) 4. a) b) 5. a) b)	1. a) Describe the difference between mitosis and meiosis. b) Write a note on numerical aberrations of chromosomes. OR 2. a) What is a pedigree chart? Explain with an example. b) Write a note on sex chromosome anomalies. 3. a) Describe Chorionic Villus sampling. b) Describe the Karyotyping. OR 4. a) Explain Amniocentesis. b) Explain FISH technique. 5. a) Write short notes on gene therapy. b) Write short notes on human genome mapping project. OR 6. a) Describe the genetic basis of hearing impairment.	

IV. 7. Explain the growth and development from birth to puberty. [10]
OR
8. Write a note on protein energy malnutrition. [10]

* * *