ROYAL CIVIL SERVICE COMMISSION
BHUTAN CIVIL SERVICE EXAMINATION (BCSE) 2022
EXAMINATION CATEGORY: TECHNICAL

PAPER III: SUBJECT SPECIALISATION PAPER FOR AUDIOLOGY AND SPEECH LANGUAGE PATHOLOGY

Date : October 9, 2022
Total Marks : 100
Writing Time : 150 minutes (2.5 hours)
Reading Time : 15 minutes (prior to writing time)

GENERAL INSTRUCTIONS:

1. Write your Registration Number clearly and correctly on the Answer Booklet.
2. The first 15 minutes is to check the number of pages of Question Paper, printing errors, clarify doubts and to read the instructions. You are NOT permitted to write during this time.
3. This paper consists of **TWO SECTIONS**, namely SECTION A & SECTION B:
    - **SECTION A** has two parts: Part I - 30 Multiple Choice Questions
      Part II - 6 Short Answer Questions
      All questions under SECTION A are **COMPULSORY**.
    - **SECTION B** consists of two Case Studies. Choose only **ONE** case study and answer the questions of your choice.
4. All answers should be written on the Answer Booklet provided to you. Candidates are not allowed to write anything on the question paper. If required, ask for additional Answer Booklet.
5. All answers should be written with correct numbering of Section, Part and Question Number in the Answer Booklet provided to you. Note that any answer written without indicating the Section, Part and Question Number will NOT be evaluated and no marks will be awarded.
6. Begin each Section and Part on a fresh page of the Answer Booklet.
7. You are not permitted to tear off any sheet(s) of the Answer Booklet as well as the Question Paper.
8. Use of any other paper including paper for rough work is not permitted.
9. **You must hand over the Answer Booklet to the Invigilator before leaving the examination hall.**
10. This paper has **8 printed pages** including this instruction page.

GOOD LUCK

SECTION A

PART I: Multiple Choice Questions [30 marks]

Choose the correct answer and write down the letter of your chosen answer in the Answer Booklet against the question number e.g. 31 (d). Each question carries ONE mark. Any double writing, smudgy answers or writing more than one choice shall not be evaluated.

1. In the case of CVA, CT findings showed the lesion in basal ganglia and thalamic region. What would be your possible diagnosis?
   a) Conduction Aphasia
   b) Transcortical sensory Aphasia
   c) Subcortical Aphasia
   d) Primary progressive aphasia

2. ABR waveforms were first discovered by
   a) Jerger
   b) Carhartz
   c) Katz
   d) Jewett

3. Schwartz sign is seen in
   a) Otosclerosis
   b) Perilympahtic fistula
   c) Meniere's disease
   d) Choleasteatoma

4. BC at 8KHz is not tested due to
   a) Standing wave
   b) Acoustical radiation
   c) Head shadow effect
   d) All of the above

5. Broadmann's area number responsible for motor speech function is
   a) 44, 45
   b) 40, 41
   c) 17, 18
   d) 36

6. Identify the mass dominant middle ear pathology from the following.
   a) Ossicular chain fixation
   b) Osscicular chain dyscontinuity
   c) Middle ear effusion
   d) Glomus Jugulare Tumor

7. Which statement is **NOT TRUE** about sub-mucus cleft?
   a) Bifid uvula
   b) Blue line appearance over the palate
   c) Muffled type voice quality
   d) Absence of incisive foramen

8. Low frequency conductive hearing loss with presence of acoustic reflex and hernebert's sign clinically are suggestive of
   a) Vestibular neuritis
   b) Meneire's disease
   c) SSCD
   d) Perilymphatic fistula

9. Mel is the measurement unit for:
   a) Sensation level
   b) loudness
   c) pitch
   d) Amplitude

10. When two sounds stimulus with SPL of 60 dB are presented simultaneously, the total SPL is
    a) 120 dB SPL
    b) 63dB SPL
    c) 60dB SPL
    d) 61dB SPL

11. A voice disorder caused due to basal ganglia lesion is:
    a) Essential voice tremor
    b) Diplophonia
    c) Spasmodic dysphonia
    d) Hoarseness

12. Swallowing centre is located at
    a) Pre-central gyrus
    b) Medulla oblongata
    c) Pons
    d) Mid brain

13. Childhood aphasia of speech is also known as
    a) specific language impairment.
    b) childhood mutism.
    c) developmental speech delay.
    d) childhood apraxia of speech.

14. What is tullio effect?
    a) Pressure induced vertigo
    b) Sound induced vertigo
    c) Positional vertigo
    d) Light induced vertigo

15. The /n/ in snow is only partially voiced in the speech of most people because of _____.
    a) vocal fatigue
    b) the /s/ is voiceless
    c) the following vowel is voiceless
    d) misarticulations

16. Acoustic reflexes can be recorded at
    a) 70dB SL
    b) 70dBnHL
    c) 70dB SPL.
    d) 70dBHL.

17. The total amount of intensity boosted by middle ear functions is
    a) 24dB
    b) 33dB
    c) 6dB
    d) 3dB

18. What is the intensity difference between MAP and MAF?
    a) 5dB
    b) 6dB
    c) 7dB
    d) 8dB

19. "Donkey breathing" technique is for
    a) Spasmodic dysphonia
    b) Mouth breather
    c) Plica Ventricularis
    d) Adenoid Hypertrophy

20. Predictive Fluency disorder test is:
    a) SPI
    b) DDD
    c) SSI
    d) EPI

21. Co articulation is the effect of _____ on the production of sound.
    a) following sound
    b) preceding sound
    c) both a and b
    d) entire sound

22. Glossopress is a technique used in
    a) rehabilitation of tongue cancer.
    b) rehabilitation of laryngeal cancer.
    c) rehabilitation of cleft palate.
    d) None of above

23. Function of the outer hair cell is:
    a) Fine tuning
    b) Sound relay
    c) Ear protection
    d) Auditory processing

24. Which of the following would most likely cause a patient to speak almost entirely in neologisms?
    a) Damage to cranial nerves
    b) Severe wernickes aphasia
    c) Spatic dysarthria
    d) Stuttering

25. Angle of male vocal cord is
    a) 125*
    b) 120*
    c) 90*
    d) 110*

26. The turn of cochlea is
    a) 1/3
    b) 4/5
    c) 2/4
    d) 1/5

27. Most dominant speech and language difficulties in autism is:
    a) Semantic difficulties
    b) Morphological difficulties
    c) Pragmatic difficulties
    d) Phonological difficulties

28. What is the impedance difference between middle ear and the inner ear?
    a) 4,000 ohm
    b) 3,000 ohm
    c) 2,500 ohm
    d) 3,500 ohm

29. Cul de Sac Technique is used for:
    a) Vocal Palsy
    b) Intellectual disability
    c) Cleft of Palate
    d) None of above

30. Landau Kleffner Spectrum is also known as
    a) acquired epileptic aphasia.
    b) childhood aphasia.
    c) syndromic aphasia.
    d) unspecified aphasia.

PART II – Short Answer Questions [20 marks]

This part has 6 Short Answer Questions. Answer ALL the questions.

1. Explain speech as an overlaid function **(5 marks)**
2. What is dysphagia? Explain briefly its mechanism and phases **(5 marks)**
3. What is NIHL? Explain why do you notice 4KHz notching in NIHL cases **(3 marks)**
4. What is otosclerosis? Why 2KHz notching occurs in otosclerosis? **(3 marks)**
5. What is functional hearing loss? What are its behavioural signs and name three tests of functional hearing loss **(3 marks)**
6. What is shadow curve? **(1 marks)**

SECTION B: Case Study [50 marks]

Choose either CASE I OR CASE II from this section. Each case study carries 50 marks. Mark for each sub-question is indicated in the brackets.

CASE I

During your tenure as Audiologist/Speech language pathologist at JDWNR Hospital, you come across the following cases. How will you manage each of them?

1. A 37-years-old female with severe tinnitus has been referred to you by ENT for audiological evaluation. Her hearing sensitivity was found to be relatively normal with no abnormal findings on tympanometry evaluation and OAE.
   a) What is tinnitus (1 marks)
   b) What are the possible causes of tinnitus? (3 marks)
   c) Explain briefly TRT model (4 marks)
   d) What are some other management options for tinnitus? (2 marks)
2. A 55-years-old male with the history of hypertension has been admitted at medical ward of JDWNRH and subsequently referred to you with the complaint of inappropriate speaking behaviour and understanding difficulty. The speech intelligibility was found to be relatively preserved. The radiological findings suggested of left posterior temporal region haemorrhage.
   a) Discuss the possible type of Aphasia in this case and its features? (2 marks)
   b) What is neologism? (1 marks)
   c) What are the assessments you would perform and findings from each test? (4 marks)
   d) Note and briefly explain management that you will suggest for such cases. (3 marks)

3. A 1-year-old baby boy has been referred to you by an oral surgeon for consultation of communication status. The child has left unilateral cleft of palate. Discuss the case with respect to the following questions.

   a) What is cleft? (1 mark)

   b) Discuss some of the major possible causes of such conditions. (3 marks)

   c) Illustrate and briefly explain the case using stripe Y classification (4 marks)

   d) Name two management approaches in this case? (2 marks)

4. A 16-years-old male student of wangbama central school was referred to you by his class teacher with the concern of speech perception and understanding issue. PTA showed hearing sensitivity within normal limits. Consider this as CAPD case scenario and discuss the following

   a) Define CAPD. (2 marks)

   b) What are the deficits you would notice in such case? (3 marks)

   c) Explain ABR and Immitance findings of this case? (2 mark)

   d) Discuss the management options for CAPD patients. (3 marks)

5. Otorhinolaryngologist has referred 55-years-old male post larygectomy for rehabilitation. Discuss the following,

   a) Define laryngectomy and its etiology. (3 marks)

   b) Describe trachea oesophageal prosthesis and its purpose? (3 marks)

   c) What are the primary goals of laryngectomy rehabilitation? (1 mark)

   d) How will you manage this case in terms of speech and language rehabilitation? (3 marks)

CASE II

1. Paediatrician has referred 1-month-old baby boy for the hearing assessment to you after graduating from NICU. The baby had severe meningitis and viral fever during his NICU stay. The radiological finding suggested bilateral labryinthine calcification normal auditory nerve integrity. Discuss the following

   a) From SNHL, what could be the possible type of hearing loss? Why? (2 marks)

   b) What could the ultimate management for this case? (1 mark)

   c) What is your immediate line of management for this case? (1 mark)

   d) Briefly discuss the test battery and tests findings considering the case as severe SNHL. (6 marks)

2. 8-Years-old male boy was referred to you by a paediatrician for speech and Language evaluation. Upon detail case history taking; you have behaviourally observed that the child is having some stereotypical signs with significant social interaction difficulties. History reveals the child was severely exposed to screen and the school teacher also complains of child having difficulty adjusting with the teaching and with his peers and you immediately suspected it as autistic features. Discuss the following

   a) Define Autism Spectrum Disorders. (2 marks)

   b) According to DSM IV, list down the types of ASD. (3 marks)

   c) What are the evaluations you would carry out for the above child? (2 marks)

   d) Briefly mention some of the management that you can plan to address child's speech and language deficits (3 marks)

3. A 40-years-old female with left sided profound hearing loss associated with facial deviation has been referred to you by otorhinolaryngologist. She complains of vomiting sensation and persistent vertigo. Radiological report suggested of left CP angle lesion. Discuss the following

   a) What is retro cochlear pathology? (1 mark)

   b) Explain the findings of Immittance audiometry in this case? (2 marks)

   c) Briefly illustrate the case using jerger box pattern. (4 marks)

   d) Explain the management options you would advise for this case. (3 marks)

4. A 6-years-old girl diagnosed as cerebral palsy is referred to you as a new case by a paediatrician for communication skills and related concerns. With this information, discuss the following.

   a) Define cerebral palsy and what are the deficits you would notice in CP? (2 marks)

   b) What are the types of cerebral palsy? (2 marks)

   c) Discuss some of the possible causes for such condition? (3 marks)

   d) Discuss the management of this patient. (3 marks)

5. A 22-years-old male was escorted by police for the hearing assessment. He was referred to Audiology Unit from the forensic department to be proceeded as medico legal case. He complains of assault and battery by a known person. On otoscopic examination, external auditory canal and tympanic membrane are found to be physically intact and normal. His response to conventional PTA was inconsistent and not reliable.

   a) What type of hearing loss do you suspect in this case? (1 mark)

   b) Describe routine audiological test that you will administer and the possible result from each test while administering to this case. (6 marks)

   c) Briefly note down few other behavioural tests for such hearing loss. (3 marks)

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