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MINISTRY OF DEFENCE
OFFICE OF THE DGAFMS/DG-3A

MANUAL ON MEDICAL EXAMINATION AND MEDICAL STANDARDS FOR UNDERGRADUATE ENTRIES INTO ARMED FORCES MEDICAL COLLEGE PUNE, COLLEGE OF NURSING, SSC OFFICERS JOINING THE AFMS AND CIVILIAN POST GRADUATE CANDIDATES JOINING AFMS TEACHING HOSPITALS/ AFMC

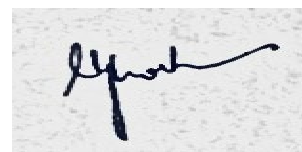
1. Keeping in view the specific training requirements, charter of duties and level of fitness desired for candidates joining the AFMS as undergraduate or postgraduate students/residents and civilian doctors joining the AFMS as Short Service Commissioned Officers, there has been a longstanding felt need to have a separate set of medical standards for this specific subset of individuals. A Board of Officers was constituted by the O/o DGAFMS for preparing a comprehensive set of medical standards and methodology for medical examination for this category of individuals.

2. A detailed study was undertaken by the Board of Officers, taking into consideration the latest scientific evidence, technical and administrative issues in the context.

3. Policy letters issued in this context by the O/o DGAFMS in the past are hereby considered as superseded.

4. A copy of the manual is forwarded herewith as an enclosure to this note.

5. This has the approval of DGAFMS.



(S Ghosh)
Col
Col AFMS (Health)

Encl:- **As above**

This policy is being amended and the new policy will be uploaded shortly.

DGMS (Army)/5A

DGMS (Navy)/Med-II

DGMS (Air)/Med-5

Internal:

DGAFMS/DG-1D

MANUAL
ON MEDICAL EXAMINATIONS AND MEDICAL STANDARDS FOR UNDERGRADUATE ENTRY INTO ARMED FORCES MEDICAL COLLEGE, COLLEGE OF NURSING, SSC ENTRY IN THE ARMED FORCES MEDICAL SERVICES AND CIVILIAN POST GRADUATE ENTRY IN AFMS HOSPITALS/AFMC

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SECTION - 1

GENERAL CONSIDERATIONS AND PRINCIPLES OF MEDICAL EXAMINATIONS

GENERAL CONSIDERATIONS AND PRINCIPLES OF MEDICAL EXAMINATIONS

1. The Armed Forces Medical Services (AFMS) are one of the largest employers in the Armed Forces. All AFMS personnel regardless of occupational specialty, unit assignment, age or gender should have a basic level of general physical and medical fitness, when inducted into the service. This basic level of fitness can then be used as a springboard to train personnel for further physically demanding occupational specialties or unit assignments and deployable combat readiness.

2. The AFMS selects doctors for commissioning as Medical Officers in the Army Medical Corps (AMC), dental surgeons for commissioning in Army Dental Corps (ADC), as well as nurses for joining the Military Nursing Services (MNS). Medical cadets are selected for entry to the Armed Forces Medical College (AFMC). Nursing cadets are selected for entry to the College of Nursing (CON) at AFMC as well as other colleges and schools of Nursing run by the Army. Civilian doctors (Priority V candidates) are selected for various post-graduate courses at AFMC and other AFMS teaching hospitals with the mandate of getting commissioned in the AFMS on completion of the course.

3. It is imperative on the part of every examining medical officer and specialist to ensure selection of medically fit individuals into the Armed Forces. It must be borne in mind by all medical officers and specialists that a candidate once selected as medically fit, if found unfit at a later stage due to a disability that could have been discovered during initial medical examination, causes considerable embarrassment to authorities and avoidable financial burden to State. In case of any doubt about any disease/ disability/ injury/ genetic disorder etc noticed during entry, the benefit of doubt will be given to the State.

4. The aim of this manual is to provide guidelines to Medical Officers, Specialist Officers, and Medical Boards involved in medical examination of candidates at Armed Forces Medical establishments as regards their medical fitness standards based on the criteria laid down in subsequent pages. The following aspects are emphasized:

(a) The guidelines enumerated in this manual are meant to be applied in conjunction with the standard methods of clinical examination.

(b) These guidelines are not exhaustive and any deformity/ disease/ disability/ injury or any abnormality in function of any part of the body/body system may be a cause for rejection even if not mentioned here.

(c) Fitness of a candidate for commissioning or entry to teaching establishments of the AFMS will be determined by duly constituted Medical Boards.

5. To be deemed 'Medically Fit' for these courses, a candidate should be:-

(a) Free of contagious diseases that might endanger the health of self and other personnel.

(b) Free of medical conditions or physical limitations that would entail excessive absence from duty for treatment and hospitalization.

(c) Capable of undergoing highly demanding training activities.

(d) Adaptable to military environment without the necessity of geographical limitations and capable of performing military tasks without access to specialized medical care. He/ she should be able to serve in any climate and terrain under austere conditions within the country as well as abroad.

6. **Applicability.** These medical standards will be applicable to medical, dental and nursing officers selected for commissioning in the AFMS; Medical Cadets and Nursing Cadets selected for entry to AFMC and other Colleges/ Schools of Nursing in the AFMS. They shall also apply to all Civilian Priority V candidates who join postgraduate courses at AFMC/other AFMS teaching hospitals.

7. Evaluation for medical fitness in respect of all candidates for commissioning into the AFMS as well as entry to AFMS teaching establishments will be conducted by duly constituted Medical Board (designated as 'Special Medical Boards') and recorded on AFMSF 2.

(a) Medical Officers will ensure that the Medical Examination Form (AFMSF 2) is correctly filled by the candidate, required declarations are given and relevant investigations are asked for and obtained before the candidates are sent to the Specialists. The examining Medical Officer is responsible for recording concisely and clearly the identification marks in the space allotted for the purpose in AFMSF 2 to facilitate candidate's future identification. The presence of a lady attendant will be ensured while examining a female candidate.

(b) Specialist Officers from Medicine, Surgery, Eye, ENT, Dental, and Gynaecology (in case of female candidates) will record their findings and comment on fitness at defined columns/ paras of AFMSF 2.

(c) The President of the Medical Board will clearly mark FIT or UNFIT as the findings of the board. The approving authority of the SMB will be the Deputy Commandant of the AFMS medical establishment (Brig I/C Adm in case of BHDC, Delhi Cantt) where the SMB has been carried out. For SMBs

carried out at AFMC, the approving authority will be Dean & Dy Comdt, AFMC.

8. The following investigations will be carried out for all candidates as part of the Medical Examination:

Age below 25 years	**Age 25 to 30 years**	**Age above 30 years**
Complete Haemogram	Complete Haemogram	Complete Haemogram
Urine RE & ME	Urine RE & ME	Urine RE & ME
X- Ray Chest PA View	X- Ray Chest PA View	X- Ray Chest PA View
ECG (Resting)	ECG (Resting)	ECG (Resting)
USG Abdomen& Pelvis	USG Abdomen & Pelvis	USG Abdomen & Pelvis
	Blood Sugar Fasting & HbA1C	Blood Sugar Fasting & HbA1C
	Liver Function Test	Liver Function Test
	Renal Function Tests	Renal Function Tests
	Lipid Profile	Lipid Profile
		X- Ray LS Spine AP & Lateral

9. Specialists will endorse detailed justification for declaring a candidate unfit. The President of the Board will inform unfit candidates the reasons for his/ her unfitness. Candidates will be informed about the appeal process.

10. Candidates found UNFIT may appeal against the findings of the Special Medical Board on payment of requisite fees. Appeal Medical Boards (AMB) for all categories or personnel other than those for entry as Medical Cadets to AFMC will be conducted in accordance with regulations issued by O/o DGAFMS. (Auth: DGAFMS letter No. 9450/Policy/DGAFMS/DG-3A dt 03 Jun 2008). In the case of candidates for entry as Medical Cadets to AFMC, AMBs will be convened at AFMC, Pune. The candidates will report for the AMB within 24 hours. Candidates will be subjected to a fresh Medical Examination only for the disability for which he/she has been declared unfit by the Special Medical Board. This examination will be carried out on a fresh AFMSF-2 (in triplicate). The approving authority of such AMBs will be Commandant, AFMC.

SECTION – 2

ANTHROPOMETRIC STANDARDS

General Considerations

11. Armed Forces personnel are required to conform to minimum height requirements based on standards laid down by administrative authorities. Standards of weight for height are, however, specified based on medical considerations.

Methods of Examination

12. Three basic measurements are required to be carried out for all candidates for commission into the Armed Forces Medical Services or for entry into AFMS training establishments. These are height, weight, and chest circumference. In certain instances, two more measurements, namely waist circumference and hip circumference, may be required to be carried out for further assessment. These measurements will be required to be taken only for conditions specified in para 15 below. The method of recording these measurements is given below:

(a) **Height.** The measurement of height requires a vertical board with an attached metric rule and a horizontal headboard that can be brought into contact with the uppermost point of the head. The individual to be measured should be bare foot and wearing little clothing so that the positioning of the body can be seen. He or she should stand on a flat surface, with weight distributed evenly on both feet, knees straight, heels together, and the head positioned so that the line of vision is perpendicular to the body. The arms hang freely by the side, and the head, back, buttocks, and heels are in contact with the vertical board. The individual is asked to inhale deeply, and the body should maintain a fully erect position. The movable headboard is brought onto the topmost point on the head with sufficient pressure to compress the hair. The height is recorded to the nearest cm.

(b) **Weight.** The individual must stand still on the center of the weighing scale with the body weight evenly distributed between both feet, wearing only briefs or underwear, or a light smock over underwear. Weight is to be recorded to the nearest Kg. As far as possible electronic weighing scales should be used for medical boards and zero should be checked before the measurement.

(c) **Chest Circumference.** The chest should be bare. The arms are abducted slightly to permit the passage of the tape around the chest. When the tape is snugly in place the arms are lowered to their natural position at the sides of the trunk. Chest circumference is measured at the level of the fourth costosternal joints counting the ribs from above. The measurement is made in the horizontal plane at the end of normal expiration and again at full

inspiration. The difference between the two measurements is to be recorded to the nearest 0.1 cm.

(d) **Abdominal Circumference.** The subject stands comfortably with his weight evenly distributed on both feet and being about 25-30cms apart. The measurement is taken midway between the inferior margin of the last rib and the crest of the ileum, in a horizontal plane. Each landmark should be palpated and marked, and the midpoint determined with a tape measure and marked. The observer sits by the side of the subject and fits the tape snugly but not so tightly as to compress underlying soft tissues. The circumference is measured to the nearest 0.1 cms at the end of normal expiration.

(e) **Hip (Buttocks) Circumference.** Wearing underwear, or a light smock over underwear, the subject stands erect with the arms at the sides and feet together. The measurer sits at the side of the subject so that the maximum level of the diameter of the buttocks can be seen and places the tape measure around the buttocks in a horizontal plane. The tape is snug against the skin but does not compress the soft tissues. The measurement is recorded to the nearest 0.1cms.

Height Standards

13. **Male cadets.** The minimum height required for entry into the AFMS for male cadets is 157 cm. Candidates from Hill and Northeastern States will be accepted with a minimum height of 152 cm. An allowance for growth of 02 cm will be made for candidates below 18 yrs at the time of examination.

14. **Female Cadets**. The minimum height required for entry into the Armed Forces for female cadets is 152 cm. Candidates from Hill and Northeastern States will be accepted with a minimum height of 147 cm. An allowance for growth of 02 cm will be made for candidates below 18 yrs at the time of examination.

Weight Standards

15. Weight for height charts given at Appendix ‘A’ for males and Appendix ‘B’ for females will be the standards for all categories of personnel. The charts specify the minimum acceptable weight that candidates of a particular height must have. Weights below the minimum specified will not be acceptable in any case. The maximum acceptable weight for height has been specified in three age categories. Weights higher than the acceptable limit will be acceptable only in exceptional circumstances like in the case of candidates with documented evidence of bodybuilding, wrestling, and boxing. In such cases the following criteria will have to be met:

(a) Body Mass Index should be below 27.

(b) Waist Hip ratio should be below 0.9 for males and 0.8 for females.

(c) Waist Circumference should be less than 94 cm for males and 89 cms for females.

(d) All biochemical metabolic parameters should be within normal limits.

Chest Circumference

16. No minimum chest circumference is specified. Chest expansion should be 05 cms or more for all categories of candidates.

Appendix 'A'
(Refers to para 15)

WEIGHT FOR HEIGHT CHART: MALES

Height	Minimum Weight	Maximum Weight (Kg)		
(cm)	(kg)	Age below 20 Yrs	Age 20 to 25 Yrs	Age above 25 Yrs
150	40	52	54	56
151	40	52	55	57
152	40	53	55	58
153	40	54	56	59
154	40	55	57	59
155	41	55	58	60
156	41	56	58	61
157	42	57	59	62
158	42	57	60	62
159	43	58	61	63
160	44	59	61	64
161	44	60	62	65
162	45	60	63	66
163	45	61	64	66
164	46	62	65	67
165	46	63	65	68
166	47	63	66	69
167	47	64	67	70
168	48	65	68	71
169	49	66	69	71
170	49	66	69	72
171	50	67	70	73
172	50	68	71	74
173	51	69	72	75

174	51	70	73	76
175	52	70	74	77
176	53	71	74	77
177	53	72	75	78
178	54	73	76	79
179	54	74	77	80
180	55	75	78	81
181	56	75	79	82
182	56	76	79	83
183	57	77	80	84
184	58	78	81	85
185	58	79	82	86
186	59	80	83	86
187	59	80	84	87
188	60	81	85	88
189	61	82	86	89
190	61	83	87	90
191	62	84	88	91
192	63	85	88	92
193	63	86	89	93
194	64	87	90	94
195	65	87	91	95
196	65	88	92	96
197	66	89	93	97
198	67	90	94	98
199	67	91	95	99
200	68	92	96	100

Appendix 'B'
(Refer Para 15)

WEIGHT FOR HEIGHT CHART: FEMALES

Height	Minimum Weight	Maximum Weight (Kg)		
(cm)	(kg)	Age below 20 Yrs	Age 20 to 25 Yrs	Age above 25 Yrs
145	37	46	48	50
146	37	47	49	51
147	37	48	50	52
148	37	48	50	53
149	37	49	51	53
150	37	50	52	54
151	37	50	52	55
152	37	51	53	55
153	37	51	54	56
154	38	52	55	57
155	38	53	55	58
156	39	54	56	58
157	39	54	57	59
158	40	55	57	60
159	40	56	58	61
160	41	56	59	61
161	41	57	60	62
162	42	58	60	63
163	43	58	61	64
164	43	59	62	65
165	44	60	63	65
166	44	61	63	66
167	45	61	64	67
168	45	62	65	68

169	46	63	66	69
170	46	64	66	69
171	47	64	67	70
172	47	65	68	71
173	48	66	69	72
174	48	67	70	73
175	49	67	70	74
176	50	68	71	74
177	50	69	72	75
178	51	70	73	76
179	51	70	74	77
180	52	71	75	78
181	52	72	75	79
182	53	73	76	79
183	54	74	77	80
184	54	74	78	81
185	55	75	79	82
186	55	76	80	83
187	56	77	80	84
188	57	78	81	85
189	57	79	82	86
190	58	79	83	87
191	58	80	84	88
192	59	81	85	88
193	60	82	86	89
194	60	83	87	90
195	61	84	87	91

SECTION – 3

DETAILED METHODOLOGY OF EXAMINATION FOR SPECIALISTS

MEDICINE AND ALLIED

17. **HISTORY**

A detailed history is to be elicited as per declaration form and supplementary questionnaire attached to AFMSF 2. History of illness not covered in the questionnaire may be elicited if examination findings indicate presence of a condition.

18. **GENERAL PHYSICAL EXAMINATION.** A diligent general physical and systemic examination will be carried out for all candidates by the physician.

(a) Record temperature, pulse and blood pressure (details of examination of pulse and blood pressure under cardiovascular examination).

(b) Examine conjunctiva for pallor and icterus.

(c) Study the appearance of the face and the distribution of hair.

(d) Examine lymph nodes in all the groups (cervical, axillary, inguinal, submandibular, occipital, epitrochlear etc.) and look for size, consistency, matting and overlying skin.

(e) The candidate should be asked to protrude his/her tongue and examined for any growth, discoloration, tremors or cyanosis.

(f) Lips should be examined for fissures and angular stomatitis.

(g) Examine oral cavity for colour of mucosa, condition of gums and teeth.

(h) The nails will be examined for any clubbing, infection, haemorrhages and abnormal colour changes.

(j) Inspect and palpate the thyroid gland. Look for enlargement (Goitre), consistency/nodularity and movement with deglutition.

(k) Skin will be examined for presence of any chronic skin disorders, features of leprosy or sexually transmitted infections.

(l) Look for presence of peripheral edema.

19. **CARDIOVASCULAR SYSTEM**

(a) **Pulse**. Rate, rhythm, volume, regularity of the pulse and condition of the arterial wall will be assessed. Thickening and hardening of the arteries are noted by rolling the brachial artery under the examiner's fingers. The pulsation of both the radial and femoral arteries should always be compared nd difference, if any, recorded. The pulse should be counted for one full minute. In addition, pulsation of carotid, popliteal, posterior tibial and dorsalis pedis arteries on both sides should be palpated and difference, if any, should be noted. For persistent tachycardia, the candidate's pulse rate should be checked twice. Pulse should be checked second time after a rest period of five minutes and both measurements should be endorsed in AFMSF-2.

(b) **Examination of Blood Pressure (BP)**. Proper technique is necessary to obtain accurate measurement of BP. The measurement should be performed when the individual is relaxed. It is emphasized that Korotkoff phase I will be recorded as systolic BP and Korotkoff phase V will be recorded as diastolic BP. To eliminate silent gap artifact, every BP recording must start by palpation method to measure systolic BP and the cuff pressure should be raised 30 mm of Hg above that while recording by auscultatory method. The individual should be sitting or lying comfortably at the time of recording of BP. Recording should be done after allowing the individual to relax. Two readings about 5 minutes apart should be taken and the lower of the two recorded.

(c) **Examination of Heart**. Examine the precordium along classical lines with special emphasis on detecting deformities, pulsations abnormal heart sounds, murmurs and added sounds.

20. **RESPIRATORY SYSTEM**

(a) The position of the trachea and apex beat should be determined. The candidate will be asked to take deep breaths to determine symmetry of thoracic movements. Further clinical examination on classical lines namely, inspection, palpation, percussion and auscultation, will be carried out. A careful clinical auscultation for crackles in all regions of the chest including post-tussive auscultation must be done.

(b) All candidates will be subjected to a radiograph of the chest (PA view).

21. **GASTROINTESTINAL SYSTEM**

(a) Examine the abdomen on classical lines with emphasis to detect scars, organomegaly, lumps or free fluid.

(b) **USG Abdomen and Pelvis**. It will be carried out for all candidates during the Medical Examination prior to entry. Disposal of cases with incidental ultrasonographic findings like fatty liver, cysts, haemangiomas, septate gallbladder etc will be based on clinical significance and functional limitation.

22. **ENDOCRINE SYSTEM**

Examine patient for findings suggestive of endocrine disorder (macroglossia, acromegaly, striae over abdomen, shoulders, chest and thigh, proximal muscle weakness, eye signs suggestive of thyroid disorder, pretibial myxedema, hyperpigmentation of skin or oral mucosa) and for features suggestive of hypogonadism.

23. **HAEMOPOEITIC SYSTEM**

Hemoglobin estimation, total and differential leucocyte count, platelet counts are to be routinely performed on an automated hematology cell counter.

24. **DERMATOLOGICAL SYSTEM**

(a) **Examination**. Skin will be carefully examined in good daylight after removing all clothes to exclude any skin disease, features of leprosy or sexually transmitted disease.

(b) Skin will be examined for dryness, excessive sweating, elasticity, abnormal pigmentation, extensive erythema, purpura, keloids, bullae, pustules, nodules, ulcers, sinuses, large nevi and infections. Special care will be taken to look for warts, hesitation cuts, areas of depigmentation or hypopigmentation, claw hand, foot drop or facial palsy.

25. **CENTRAL NERVOUS SYSTEM EXAMINATION**

25 (a) **Mental status Examination.** The candidate will be assessed

by clinical examination consisting of observation and brief mental state examination, which will be carried out by a Medical Specialist who will especially evaluate for signs and symptoms enumerated below. Any substantial doubt about the presence of psychiatric illness shall be grounds for rejection.

Appeal in case of Rejection will be reviewed by Psychiatrist after exclusion of medical/ other disorder, if any. In case of marks on skin arising from suspected self-harm the candidate will be reviewed by Dermatologist prior to Psychiatrist. Possible self-inflicted injuries will be evaluated by the medical officer conducting medical examination. Presence of scar(s) on extremities and/ or other body parts accessible to dominant hand, indicative of being deliberately inflicted, will be grounds to declare unfit. The medical specialist conducting medical examination will look for the following signs which will be grounds of rejection.

25 (b) **General Examination**

(i) Prominent tremors.

(ii) Bradykinesia.

(iii) Rigidity (indicating usage of antipsychotics).

(iii) Excessive restlessness/ fidgeting.

(iv) Evidence of drug use (scarred and/ collapsed veins, multiple healed marks).

(v) Excessive sweating over palms and soles.

(vi) Tics.

(vii) Stereotyped behaviors (rocking, hand-flapping etc.).

25 (c) **Appearance and behavior**

(i) Poor grooming.

(ii) Odd or eccentric behavior.

(iii) Hallucinatory behavior (talking/ muttering to self).

(iv) Persistent downcast gaze/ avoiding eye contact.

25 (d) **Speech**

(i) Non-spontaneous/ monotonous.

(ii) Prominent stammering.

(iii) Mute.

(iv) Abnormally low or high volume.

(v) Not understandable/ incomprehensible.

(vi) Vocal Tics.

25 (e) **Mood**

(i) Appearing unusually depressed or cheerful.

(ii) Appearing apathetic

25 (f) **Neurological Examination**. Each candidate will undergo an orderly neurological examination.

(i) Evaluate speech (articulation, fluency, verbal comprehension, naming, repetition, reading and writing).

(ii) Examine cranial nerves.

(iii) Examine motor and sensory system examination of upper limbs, trunk and lower limbs.

(iv) Examine spine and skull.

(v) Examine peripheral nerves for thickening.

(vi) Test for coordination of lower limbs by asking the candidate to tandem walk. The test is done by asking the candidate to walk along a straight line placing the heel of one foot immediately in front of the toe of the one behind. Ask the candidate to turn around and walk back to the examiner. Look for swaying to either side and in-coordination while turning around.

(vii) Examine for tremors of hands, tongue, and eyelids The candidate should stand with his eyelids slightly closed and with his arms stretching out before him at shoulder level. The fingers should be separated and fully extended. If tremors are found to be significant, the candidate should be made unfit. In recording eyelid tremors, the normal blinking movements should be ignored.

26. **STANDARDS FOR FITNESS**

26 (a) **HISTORY**

(i) If the answer to any question in self declaration in AFMSF 2 and supplementary questionnaire is YES the candidate may be considered UNFIT.

(ii) Those with family history of seizure will be referred to a neuro physician for opinion before final disposal.

(iii) In case of pulmonary tuberculosis, old treated cases with no significant residual abnormality (Clinical, radiological and other investigations) can be accepted if treatment was completed more than two years prior and there is no functional deficit.

26 (b) **GENERAL EXAMINATION**

UNFIT

(i) Presence of icterus, cyanosis.

(ii) Deformities of skull, face or mandible of a degree that will prevent the individual from wearing a protective mask or military headgear are grounds for rejection.

(iii) Moderate to severe hirsutism in females.

(iv) Lymph nodes more than one cm in size (more than 1.5 cm for inguinal group) and involving more than two groups or fixed/ confluent nodes.

(v) Lips- Presence of any growth, ulceration, cracks/ fissures in the corner of mouth (angular stomatitis) are abnormal and not acceptable.

(vi) Tongue - Presence of macroglossia, tremors, cyanosis,

tongue tie, leukoplakia.

(vii) Nails - Presence of clubbing, platynychia, koilonychia, fungal infections in more than one nail, thimble pitting, separation of nails from nail bed, splinter haemorrhages.

(viii) Presence of peripheral edema.

(ix) Thyroid - Any enlargement, nodularity, or lack of movement with swallowing.

26 (c) **DERMATOLOGICAL SYSTEM**

UNFIT

(i) Any nevus more than 20 cm in length.

(ii) Congenital multiple naevi or vascular tumours that interfere with function or are exposed to constant irritation or associated with syndromes.

(iii) Presence of more than five CALM (Café-au-lait macules) or any other associated neuro-cutaneous syndromes.

(iv) More than one Neurofibroma or one plexiform neurofibroma.

(v) Xanthomata if associated with hyperlipidemia.

(vi) Lipomas causing significant disfigurement/functional impairment due to its size/ location.

(vii) Palmar and plantar warts, corns and extensive callosities are unfit.

(viii) Chronic skin diseases like psoriasis, lichen planus, bullousdiseases, eczema, ichthyosis, palmoplantar keratoderma (thickeningof palms and soles), recurrent urticaria, angioedema, dermographism, any congenital or hereditary disease.

(ix) Skin infections such as Tinea cruris, Tinea corporis, Intertrigo, Pityriasis versicolor, Impetigo, Folliculitis, Furunculosis, Scabies, warts, Molluscum contagiosum, Herpes simplex or zoster if extensive.

(x) Acne on the face or trunk of grade III and IV or with abscess, cysts, hypertrophic scars etc).

(xi) Rosacea (Redness of face with dilated blood vessels and pustules).

(xii) Moderate to severe hirsutism in females.

(xiii) More than 01 patch of alopecia areata characterized by circular/ oval patches of non-scarring hair loss/ solitary patch >2cm.

(xiv) Loose or unduly elastic skin.

(xv) Keloid (even if single).

(xvi) Large hypertrophic scars which interfere with normal functioning.

(xvii) Clinical evidence suggestive of leprosy.

(xviii) Any evidence of STD present or past.

(xix) Evidence of hyperhidrosis.

26 (d) **CARDIOVASCULAR**

UNFIT

(i) Persistent tachycardia (more than 100 bpm).

(ii) Persistent bradycardia (less than 60 bpm) which is not considered to be physiological.

(iii) Candidates with BP consistently greater than 140/90 mm Hg.

(iv) Any abnormal heart sounds.

(v) Any organic cardiac murmur opening snap, click, rubs.

26 (e) **RESPIRATORY**

UNFIT

(i) Parenchymal disease -any abnormality on clinical examination or Chest X-Ray.

(ii) Any evidence of pleural thickening or presence of effusion.

FIT

(iii) Old treated pulmonary tuberculosis, if the treatment was completed more than two years earlier and there is no residual functional deficit. (Clinical, radiological, and other investigations).

26 (f) **GASTROINTESTINAL**

UNFIT

(i) Palpable spleen, kidney, abdominal lump or free fluid.

(ii) Presence of peripheral signs of liver cell failure (loss of hair, parotid enlargement, spider nevi, gynecomastia and testicular atrophy).

26 (g) **USG findings**

(i) **Liver**

FIT

(aa) Normal echotexture and anatomy of the liver, common bile duct, intra hepatic biliary radicles, portal and hepatic veins.

UNFIT

(ab) Fatty liver - Grade II and III.

(ac) Fatty liver - Grade I with abnormal Liver Function Tests.

(ad) Size of liver 15 cms or more.

(ii) **Spleen**

UNFIT

(aa) Size of spleen 12 cms or more.

26 (h) **ENDOCRINE**

UNFIT. Any history, examination or investigation suggestive of endocrine disorders.

26 (j) **HEMATOPOEITIC SYSTEM**

UNFIT

(i) Hemoglobin (Hb) of less than 13 g/dl in males and 11.5 g/dl in females. Hemoglobin > 18 g/dl will be unfit for all candidates.

(ii) Any significant abnormality detected in PBS will be a cause for rejection.

(iii) Hereditary hemolytic anaemias (due to red cell membrane defect or due to red cell enzyme deficiencies) and Haemoglobinopathies {Sickle cell disease, Beta Thalassaemia (Major, Intermedia, Minor, Trait) and Alpha Thalassaemia etc}.

(iv) Current bleeding disorders to include but not limited to hemophilias, von Willebrand's Disease, Idiopathic Thrombocytopenia.

26 (k) **CENTRAL NERVOUS SYSTEM**

UNFIT

(i) Presence of scar(s) on extremities and/or other body parts accessible to dominant hand, indicative of being deliberately inflicted.

(ii) Any abnormality observed during Mental Status examination (Appearance, behavior, speech & mood)

(iii) Any disorder of speech

(iv) Any neurological deficit (cranial nerves, motor, sensory, coordination, gait)

(v) Tremors of eyelids, tongue and hand

26 (l) Any abnormality not mentioned above but likely to interfere with performance of duty will also be rendered unfit.

SECTION - 4

DETAILED METHODOLOGY OF EXAMINATION FOR SPECIALISTS

SURGERY AND ALLIED

27. HISTORY. A detailed history will be obtained and documented which will be signed by the candidate. History of medical conditions given below and not forming part of AFMSF 2 will be recorded in a supplementary questionnaire and signed by the candidate.

28. METHOD OF GENERAL SURGICAL EXAMINATION

(a) General physical examination of the candidate will be carried out in good illumination in a well-lit room, after removal of all clothes.

(b) For female candidates, examination should always be carried out in the presence of a lady attendant.

29. STEPS OF EXAMINATION

(a) As soon as the patient walks in, gait must be assessed.

(b) The candidate is asked to walk towards and away from the medical examiner.

(c) The candidate is then asked to squat with the sole touching the ground completely.

(d) Spine curvature is assessed when the candidate bends forward trying to touch his feet. Any abnormal curvature of the spine needs to be evaluated further.

(e) The candidate is then asked to fan out the fingers and a note is made of abnormal curvature and any absence of/ supernumerary digits.

(f) The candidate is then asked to stand on his/ her toes and a note is made of any abnormal plantar arch, curvature and any absence of/supernumerary digits.

(g) Candidate is then asked to extend the forearm and abnormal curvature/ carrying angle is assessed.

(h) All the movements are assessed at neck/shoulder/ elbow/ wrist and joints of hands.

(j) All the hernial orifices are assessed after asking the candidate to cough facing away from the examiner.

(k) External genitalia are assessed in standing position to look for

undescended testis/ any scrotal swelling/ mass.

(l) Movements and deformities are then assessed at the hip/ knee/ ankle and small joints of the feet.

(m) Patient is then examined in the left lateral position lying on the couch with right knee flexed and touching the chest and left leg extended. Candidate is asked to cough to look for hemorrhoids. During this process, visual assessment for fissure/fistula/skin tags/ previous scars and pilonidal sinus are made.

(n) Candidate is then asked to lie supine on the examination couch and general examination of the abdomen is done to look for any organomegaly, scar, sinuses, fistula/ dilated veins/ any other abnormal findings.

30. <u>Head & Neck</u>

(a) Any craniofacial abnormality.

(b) Cleft lip/ palate.

(c) Previous scars of craniotomy or any head and neck surgery

31. <u>Chest & spine</u>

(a) Visible Pulsations.

(b) Amazia, Polymazia, Polythelia, Gynecomastia, discharge from nipples, lump/abscess in the breast.

(c) Chest symmetry.

(d) Dilated vessels.

(e) Respiratory movements.

(f) Deformities of rib cage, scapula, shoulder, spine.

(g) Congenital abnormalities.

(h) Hypertrichosis, dimpling of skin, vascular tumors, pigmented naevi, sinuses, tuft of hair over spine, kyphosis, and scoliosis.

(j) Any scar of previous surgery.

32. **Abdomen**

(a) Size, distention, symmetry.

(b) Movements of abdominal wall, surgical scars, dilated vessels.

(c) Visible peristalsis.

(d) Hernia, impulse on coughing.

(e) Tenderness, lump/ fluid, liver, gallbladder, kidneys.

(f) Inguinal lymph nodes.

(g) Hemorrhoids, prolapse of rectum/ uterus, skin tags.

(h) Fistulae, pilonidal sinus, condyloma, fissures, sinuses.

33. **Urogenital**

(a) Penis, scrotum, spermatic cord, epididymis, meatus (location), urethra.

(b) Hydrocele, varicocele, undescended testis, atrophic testis.

(c) External genitals in females.

(d) Visible lesions indicative of Sexually Transmitted Infections.

34. **Extremities and Musculoskeletal system**

(a) Upper limbs:

(i) Fingernails - Splinter hemorrhages, platynoychia, separation from nail bed and absence of nails.

(ii) Deformities of elbows & digits.

(iii) Axillary lymph nodes, warts, corns, callosities, abnormal growth.

(iv) Joint swelling, Cubitus varus/valgus.

(v) Deformities of shoulder/elbow/wrist joints, abnormal/restricted movements.

(vi) Complete/partial amputation of digits/ polydactyly/syndactyly.

(vii) Evidence of recurrent dislocation of shoulder.

(viii) Neuro-vascular deficits.

(ix) Muscles wasting, reflexes, coordination.

(b) Lower Limbs:

(i) Stance, gait, balance.

(ii) Oedema, varicose veins, ulcers, warts, corns, callosities, growths.

(iii) Muscle wasting, reflexes, coordination.

(iv) Knock knee, bow legs, flat feet, hammer toes.

(v) Joint swelling, Genu varus/ valgus/ recurvatum.

(vi) Flat feet, deformities of arch of foot, clubfoot.

(vii) Complete/ partial amputation of toes/ Polydactyly/ Syndactyly.

(viii) Neurovascular deficit.

(ix) Hallux valgus/varus.

35. Vascular & lymphatic system

(a) Varicose veins

(b) Peripheral Arterial Disease

(c) Deep Vein Thrombosis

(d) Thrombophlebitis

(e) AV malformation

36. Fitness after Surgery

Candidates will be considered fit only after the minimum laid down period following surgery for the disease/disability is over and there are no complication or residual defect.

(a) All open abdominal surgeries including midline laparotomies can be assessed for fitness after 24 weeks from the date of surgery.

(b) All operated inguinal hernia (open/ lap) will be assessed for fitness after 12 weeks from the date of surgery.

(c) Laparoscopic cholecystectomy & laparoscopic appendectomy will be assessed for fitness after 8 weeks from date of surgery.

(d) For any other surgery, where the time period after surgery is not mentioned in this manual, the candidate can be assessed for fitness after a minimum of 02 weeks following the surgery provided the scar is well healed and there is no post op complication.

(e) The final decision on fitness for these candidates presenting with previous surgeries shall depend upon the exact nature of surgery & indication for surgery as stated in the authentic medical documents, OT notes, histopathology reports, hospital discharge summary or case summary etc. signed & stamped by a registered medical practitioner or surgeon. Candidates who have undergone a surgical procedure will be declared unfit if the aforesaid supporting documents are nor produced, irrespective of the nature of the surgery.

37. STANDARDS FOR FITNESS

Standards of fitness are described in detail in the following sections.

38. ABDOMEN

38 (a) **Gastrointestinal Tract.** Laparotomy scars, ostomies, swellings over abdomen, lumps and sinus will be examined by the surgical specialist who after clinical examination, necessary investigations and scrutiny of relevant documents will make only those candidates fit who fulfill the laid down parameters as stated above.

38 (b) **Anorectal Conditions.**

UNFIT

(i) Those with anal fistula, hemorrhoids, (internal or external), anal or rectal polyp, stricture, or fecal incontinence. Rectal prolapse even after operative correction remains unfit.

(ii) Any anorectal surgery with post op complications.

FIT

(iii) Those with external skin tags and after rectal surgery for polyps, haemorrhoids, fissure, fistula, or ulcer provided there

is no residual/recurrent disease.

38 (c) **Anterior Abdominal Wall Hernia including Inguinal and femoral Hernia and excluding Incisional Hernia.**

UNFIT

(i) Any abdominal wall hernia.

FIT

(ii) After 12 weeks of any hernia repair surgery (open as well as laparoscopic) provided there is no recurrence or postoperative complication.

38 (d) **Incisional Hernia**

UNFIT

(i) All current or operated cases of incisional hernia.

38 (e) **Gallbladder**.

UNFIT

(i) **Clinically** Palpable gall bladder

(ii) **Radiologically**

(aa) Cholecystitis.

(ab) Cholelithiasis or biliary sludge.

(ac) Choledocholithiasis.

(ad) Polyp of any size and number.

(ae) Choledochal cyst.

(af) Gall bladder mass.

(ag) Gallbladder wall thickness more than 03 mm/features suggestive of chronic cholecystitis.

FIT

(iii) Normal echotexture and anatomy of the gallbladder.

(iv) **Post Laparoscopic Cholecystectomy**.

(aa) 8 weeks after lap cholecystectomy.

(ab) No post op complications.

(ac) Wound healed well without incisional hernia.

(v) **Post Open Cholecystectomy**

(aa) 24 weeks after surgery.

(ab) Healthy scar with no incisional hernia.

(ac) No post op complications.

38 (f) **Liver**

UNFIT

Radiologically

(i) Solitary simple hepatic cyst > 2.5cm.

(ii) Complex cyst of any size with thick walls, septations, papillary projections and debris.

(iii) Multiple simple cysts with any cyst more than 2 cm in size.

(iv) Solitary hemangioma > 3 cm or multiple hemangiomas (> 3 in number), irrespective of the size and location.

(v) Portal vein thrombosis.

(vi) Evidence of portal hypertension (PV >13 mm, collaterals, ascites).

(vii) Focal nodular calcification

(aa) Any focal nodular calcification > 1 cm in size.

(ab) Multiple focal nodular calcification < 1 cm in size and >5 in number.

(viii) Linear/Arc like calcification of size > 3 cm, suggestive of old healed hydatid disease.

38 (g) **Spleen**

UNFIT

(i) History of splenectomy due to any cause is unfit.

(ii) Diseases of spleen (splenic abscess, hydatid cyst, any complex cyst/multiple cysts, space occupying lesion).

38 (h) **Pancreas**

UNFIT

(i) Any structural abnormality.

(ii) Space Occupying Lesion/ Mass lesion.

(iii) Features of chronic pancreatitis (calcification, ductal abnormality, atrophy).

38 (j) **Peritoneal Cavity**

UNFIT

(i) Ascites.

(ii) Solitary mesenteric or retroperitoneal lymph node >1 cm. (Single retroperitoneal LN <1 cm and normal in architecture may be considered fit).

(iii) Two or more lymph nodes of any size.

(iv) Any mass or cyst.

39. **UROGENITAL SYSTEM**

39 (a) **Examination**. The external genitalia will be meticulously examined to rule out the presence of congenital anomalies such as: -

(i) Hypospadias.

(ii) Epispadias.

(iii) Ambiguous genitalia and undescended or ectopic testis.

39 (b) In addition, look for other conditions such as: -

(i) Hydrocele

(ii) Varicocele.

Clinical Grades of Varicocele are as given below as per the Dubin and Amelar classification: -

Subclinical - Not detected clinically/only radiologically.

Grade I - Palpable only with Valsalva manoeuvre

Grade II - Palpable without Valsalva manoeuvre

Grade III - Visible through the scrotal skin

Radiological classification of varicocele is given by Sartechi, which is as follows:

Grade I - No scrotal varicosities seen. Reflux seen in inguinal canal only and during Valsalva manoeuvre.

Grade II - Small varicosities seen till superior pole of testis and reflux seen on Valsalva only.

Grade III - Varicosities seen till inferior pole of testis on standing and on performing Valsalva manoeuvre, however no enlargement seen on supine position.

Grade IV - Varicosities/venular enlargement seen on supine position which increases on standing or on Valsalva manoeuvre.

Grade V - Varicosities/ enlargement seen on lying down even without Valsalva manoeuvre.

(iii) Epididymal cyst/ mass.

(iv) Infection of the urethra and/ or testes/ epididymis.

(ii) Phimosis.

(iii) Stricture urethra.

(vii) Meatal stenosis.

40. Standards.

40 (a) **Renal Calculi/ Urolithiasis**

UNFIT

(i) Current/ Recurrent calculus

(ii) Nephrocalcinosis.

(iii) Previous genito-urinary surgery with residual structural/ functional impairment.

(iv) Vesical calculus

(iv) Urethral calculus

40(b) **Undescended Testis (UDT) and Loss of Testis**

UNFIT

(i) Any abnormal position of testis, unilateral or bilateral. Bilateral orchiectomy due to any cause such as trauma, torsion/infection.

(ii) Bilateral atrophic testis

(iii) Incompletely descended testis (unilateral/bilateral)

(iv) Testicular mass (unilateral/bilateral)

FIT.

(v) Operatively corrected UDT is FIT, provided it is normal in location and the wound has healed well. Unilateral atrophic testis, unilateral orchiectomy for benign condition is FIT, provided other testis is normal in size, fixation and location.

40 (c) **Varicocele**

UNFIT

(i) Clinically grade II & III

(ii) Radiologically grade II-V

FIT

(iii) Clinically, subclinical and grade I.

(iv) Radiologically grade I.

(v) Post-operative cases with no residual varicocele and no post-op complication or testicular atrophy.

40 (d) **Hydrocele**

UNFIT

(i) Current hydrocele on any side.

FIT

(ii) Operated cases if there are no post-op complications and the wound has healed well.

40 (e) **Epididymal Cyst/ Mass, Spermatocele**

UNFIT.

(i) Current presence of cyst/ mass.

FIT.

(ii) Post-operative cases after surgery in absence of recurrence and only when benign on histopathology report.

40 (f) **Epididymitis/ Orchitis**

UNFIT

(i) Presence of current orchitis or epididymitis/ tuberculosis.

FIT.

(ii) After treatment provided the condition has resolved completely.

40 (g) **Epispadias/ Hypospadias**

UNFIT

(i) Except the glanular variety of hypospadias and epispadias which is FIT.

FIT

(ii) Post-operative cases after successful surgery provided recovery is complete and there are no complications.

40 (h) **Penile amputation.** Any amputation will make the candidate UNFIT.

40 (j) **Phimosis**

UNFIT

(i) Current phimosis, if tight enough to interfere with local hygiene and voiding and/or associated with Balanitis Xerotica Obliterans.

FIT

(ii) Operated cases provided the wound is fully healed and no post-op complications are seen.

40 (k) **Meatal Stenosis**

UNFIT

(i) Current disease, if small enough to interfere with voiding. Clinically significant meatal stenosis with thin stream or interfering with voiding or associated with back pressure changes.

FIT

(ii) If not interfering with voiding and provided post-operative wound is fully healed and no post op complications are present.

40 (l) **Stricture Urethra, Urethral Fistula.**

UNFIT.

(i) History of/ current disease or after surgery.

40 (m) **Renal Cyst**

UNFIT.

(i) Complex cyst of any number/ size.

(ii) Solitary Simple cyst >3cm (Unilateral).

(iii) Multiple cysts of any size or any number (unilateral or bilateral).

FIT.

(iv) Solitary, unilateral, simple renal cyst less than 3 cm.

(n) **Sex reassignment surgery/Intersex conditions. UNFIT**

(p) **Congenital defects**. Solitary kidney/ horseshoe kidney/hydronephrosis/ ectopic/ mal-rotated kidney. **UNFIT**

(q) **Renal Transplant recipients**. **UNFIT**

(r) **Nephrectomy(Simple/Radical/Donor)/Partial nephrectomy/ RFA/Cryoablation. UNFIT.**

(s) **Mass lesion in Genitourinary system.** Any palpable mass/ lump or that detected on investigation is unfit.

(t) **Hypoplastic kidney: UNFIT** if Size ≤ 8 cm in long axis.

41. **VASCULAR SYSTEM.**

41 (a) **Varicose Veins**

UNFIT

(i) Clinical evidence of varicose veins (dilated, elongated, tortuous veins) with or without complications

(ii) Prominent veins with clinical or radiological evidence of SFJ, SPJ or multiple perforator incompetence.

(iii) Post-op cases of varicose veins with complications.

41(b) **Arterial System**

UNFIT

(i) Current or history of abnormalities of the arteries and blood vessels such as aneurysms, arteritis, and peripheral arterial disease.

41(c) **Lymphoedema–Primary or Secondary**

UNFIT

(i) If history of past/current disease.

42. HEAD, NECK AND CHEST.

42(a) **Deformities of Skull and Face**

UNFIT

(i) Cranio-facial anomalies or anomalies which prevent the individual from wearing a protective mask or military headgear or are likely to interfere in training or discharge of military duties. Unfit even after correction surgery for the above has been done. Any residual postoperative defect in the skull.

42(b) **Head Injury**

UNFIT

(i) Any history of head injury requiring surgical intervention or with residual medical/surgical deficit or having effects of Head injury.

(ii) History of moderate or severe head trauma.

(iii) History of head trauma with residual localized/ generalised neurological deficit.

(iv) Operated for head trauma.

(ii) After effects of head trauma (Loss of memory/ neuro-deficit).

42(c) **CNS shunts**

UNFIT

(i) Past history or current presence of a shunt.

42(d) **Cleft Lip and Palate**

UNFIT

(i) Cleft lip in presence of current defects

(ii) Operated cleft lip and palate with middle ear/speech abnormalities.

FIT.

(iii) Cleft lip and palate after surgical correction without any postoperative complications, gross cosmetic deformity or functional problems and absence of other congenital anomalies of middle ear, speech and orthodontic problems.

42(e) **Congenital Cyst of Branchial Cleft Origin, Thyroglossal Cyst with or without Fistulous Tracts**

UNFIT

(i) Current untreated disease.

FIT

(ii) After surgery, provided there are no postoperative complications, residual/ recurrent disease and wound has healed well.

42(f) **Chest wall deformities**

UNFIT

(i) Any chest wall deformities like Pectus excavatum, Pectus carinatum, that are likely to interfere with physical exertion during training and performance of military duties or adversely affect military bearing or are associated with any musculoskeletal, pulmonary or cardiac anomaly.

FIT

(ii) In absence of above.

42(g) **Any Resection of Lung Parenchyma** - **UNFIT**

42(h) **Cardiac Surgery/ Intervention - UNFIT**

(i) Polymazia and Polythelia associated with clinical syndromes (Any chest wall deformity, cardiac and genitourinary abnormalities.

42(j) **Lump Breast (In female candidates)**

UNFIT

(i) Fibroadenoma size > 3 cm on USG in maximum dimension - UNFIT

(ii) Multiple breast lumps.

(iii) Any nipple discharges

(iv) Pathological nipple retraction/inversion/erosion

FIT

(v) After surgery with no recurrence/residual lump breast and histopathology report confirmatory of benign disease.

42(k) **Gynecomastia (operated) -** FIT.

42(l) **Gynecomastia** associated with underlying palpable breast nodule > 2cm - UNFIT

43. SKIN/ SUBCUTANEOUS TISSUE.

(a) **Lipoma**

FIT

(i) Unless causing significant disfigurement/ functional impairment due to its size/ location.

(b) **Neurofibromas**

FIT

(i) Single neurofibroma unless plexiform

UNFIT

(ii) More than one neurofibromas or single plexiform neurofibroma

(c) Congenital multiple naevi or vascular tumours that interfere with function or are exposed to constant irritation. UNFIT

(d) Moles/ nevi > 20 cm size in greatest dimension, anywhere in the body. UNFIT

44. MUSCULOSKELETAL SYSTEM

44(a) **History**

A detailed history is to be elicited as per declaration form and supplementary questionnaire attached to AFMSF 2. History of illness not covered in the questionnaire may be elicited if examination findings indicate presence of a condition.

44(b) **Examination**

(i) The candidate should be completely exposed so that the entire spine, buttocks and shoulders are visible. In case of females,

appropriate short underclothing may be worn, and examined in presence of a lady attendant.

(ii) A quick survey of the whole body from head to toe is done from the front, back and both sides, looking for asymmetry of body structure, body posture, and muscular development.

(iii) The candidate should be asked to walk a few steps taking the opportunity to observe the gait pattern specifically observing the step length, any visible lurch or limp, high steppage of feet, unusual drop of the hemi-pelvis or shoulder.

(iv) Candidate may be asked to walk on tip toes in a straight line. He is then asked to stand erect and demonstrate the range of movement of all the joints of the upper limb and lower limb. He is then asked to bend completely forward to demonstrate spinal movement and normal flexibility. Regional examination of individual areas like the neck, shoulder, elbow, wrist and hand, hips, knees, ankle and foot should be accomplished in a methodical and meticulous manner.

(v) Specifically look for scarring due to injuries/surgery in the extremities and spine region and arthroscopic portal scars around the major joints. The traditional tenets of examination including inspection, palpation, movement, measurement and assessment of range of motion and stability of the individual joints should be done.

(vi) Congenital anomalies of the extremities, coronal and sagittal plane deformities of the limbs, amputations, deformities and loss of digits or its parts should be looked for. The candidate’s footwear may also be inspected to look for abnormal patterns of wear.

44(c) **Examination of Spine**

A thorough examination of the spine of the candidate will be done while standing from front, side and behind. The following aspects shall be examined:

(i) The candidate’s gait will be assessed for bipedal unassisted, toe and heel walking and tandem gait.

(ii) On examination from behind and side; note will be made of the curvature of the spine and any deviation in curvature in sagittal and coronal plane suggestive of excessive lordosis, kyphosis, or scoliosis.

(iii) Shoulder asymmetry should be noted

(iv) Abnormality noted on the skin overlying the spine viz, hypertrichosis with long silky hair, dimpling of skin, hemangioma or pigmented naevus or dermal sinus present over the spine are signs which should alert the recruiting MO to an underlying spinal pathology of spinal dysraphism.

(v) Palpate the spine for any defect/ step or tenderness.

(vi) Candidate must be asked to bend forwards and touch the ground with his fingers. Candidates should be examined for lateral and rotational movements of the spine. Restriction in movements in cervical, thoracic, and lumbar spine must be assessed and documented.

(vii) Note for any abnormal prominence of the rib cage signifying a rib hump in case of scoliosis. Any limb length discrepancy, pelvic obliquity must be noted.

(viii) Examine for loss of lordosis, paraspinal spasm, muscle wasting and hamstring tightness.

(ix) Neurological examination for assessment of motor, sensory deficits, and deep tendon jerks.

In case of any abnormality mentioned above, the candidate will be UNFIT.

45. The **following conditions of the spine are UNFIT**:-

(a) Spina Bifida: Spina bifida with or without associated cord anomalies like tethered cord, diastemetamyelia, split cord malformation.

(b) Lumbosacral Transitional Vertebrae: Castellvi Type II, III and IV.

(c) Vertebral Body Anomalies:-
Anterior/ Central Defect/Formation defects (Hemivertebra, wedge vertebra/ Segmentation defects (Block vertebra)/ Post traumatic collapse, vertebral compression fracture.

(d) Spondylolysis and Spondylolisthesis (any grade)

(e) Spinal Canal Stenosis

(i) Cervical canal stenosis any degree. Antero-posterior diameter < 11mm is suggestive of spinal stenosis. Pavlov ratio of 0.8 is abnormal.

(ii) Lumbar canal stenosis- less than 11mm for the antero-posterior diameter and 16mm for the transverse diameter.

(f) Spondylosis and Disc Prolapse

(i) UNFIT - Spondylosis any grade

(ii) UNFIT- Prolapsed intervertebral disc-

(g) Spinal Kyphosis**-** any grade.

(h) Scheuermann’s kyphosis any grade

(j) Scoliosis **-** UNFIT- Cobb’s angle > 15 degrees

(k) The following radiological abnormalities are **UNFIT**:

(i) Post infective kyphosis or spondylitis

(ii) Atlanto-axial/atlanto-occipital anomalies.

(iii) Ankylosing spondylitis or other inflammatory spondylopathies.

(iv) Granulomatous disease of spine.

46. **Standards for Musculoskeletal System**

46(a) **General**

(i) Current deformities, disease, or chronic joint pain of pelvic region, thigh, lower leg, knee, ankle or foot that prevent the individual from following a physically active life or that may reasonably be expected to interfere with walking, running, weight bearing, or with satisfactorily completing training or military duty may be evaluated by specialist.

(ii) Current discrepancy in limb-length that causes a malfunction – UNFIT.

(iii) Evidence of arthritis- degenerative, inflammatory, secondary – UNFIT.

(iv) Musculo-skeletal tumors: Existing or Operated (benign/malignant) - UNFIT.

46(b) **Lower Limbs**

UNFIT

46(b)(i)**Foot**

(aa) Current absence of a foot.

(ab) Complete or partial loss of great toes.

(ac) Loss of the entire toe.

(ad) Loss of terminal phalanx of 02 or more toes (excluding great toe).

(ae) Angular deformity of toes more than 10 degrees with callosities, corns or overriding.

(af) Hallux Valgus with 1st MTP angle > 20 degrees and IMT angle > 10 degrees between 1st and 2nd metatarsals is Unfit. Hallux Valgus of any degree with bunion, corns or callosities.

(ag) Symptomatic deformity of the toes (acquired or congenital), including but not limited to conditions such hallux varus, hallux rigidus, hammer toe(s), claw toe(s), or overriding toe(s) when associated with callosities, bunion, corns.

(ah) Clubfoot, Pes cavus (high arch foot).

(aj) Rigid or symptomatic Pes planus (acquired or congenital) - arches do not reappear on standing on toes, unable to skip on forefoot.

(ak) Symptomatic neuroma.

(al) Polydactyly -UNFIT.

(am) Syndactyly (>25%) -UNFIT.

46(b)(ii) **Knee**

(aa) Current loose or foreign body in the knee joint.

(ab) Anterior or posterior cruciate, medial and lateral collateral ligament injury with or without instability.

(ac) Surgical reconstruction of knee ligaments within the last 12 months, or which is symptomatic or unstable or shows signs of thigh or calf atrophy.

(ad) Current medial or lateral meniscal injury with symptoms or limitation of activity.

(ae) Meniscectomy, meniscal repair, meniscal transplant. within the last 6 months or with residual symptoms or limitation of activity.

(af) Dislocation of patella in past 02 years, or recurrent episodes with or without surgery.

(aj) Dislocation of the knee, with or without surgery.

(ak) Chondromalacia patellae, chronic patello-femoral pain syndrome and, osteoarthritis, or traumatic arthritis.

46(b)(iii) **<u>Hip</u>**

(aa) Developmental dysplasia (congenital dislocation) of the hip, osteochondritis of the hip (Legg-Calve-Perthes Disease) or slipped capital femoral epiphysis of the hip.

(ab) Traumatic hip dislocation.

(ac) Hip arthroscopy or femoral acetabular impingement.

46(b)(iv) **<u>Angular deformities</u>**

<u>UNFIT</u>

(aa) Genu Varum- Intercondylar distance > 10 cm. Measure in standing posture, knees in full extension, thighs touching closely, measured at level of adductor tubercle.

(ab) Genu Valgum- Intermalleolar distance > 5 cm in males and > 8 cm in females Measure in standing posture, knees in full extension, thighs touching closely, measured at level of tip of medial malleolus.

(ac) Genu Recurvatum. Hyperextension of knee >10 degrees is unfit. Measure in standing posture, knees in full extension.

46(c) **Upper Limb**

UNFIT

(i) Fingers and Thumb: Inability to clench fist, pick up a pin, grasp an object, or touch tips of fingers with thumb.

(ii) Absence/ deformity - Hand and Fingers:

(aa) Absence of any part of either thumb or index finger.

(ab) Complete loss of distal phalanx of any finger or more of any finger on either hand.

(ac) Partial loss of distal phalanx with any functional disability.

(ad) Amputation through the DIP joint or any other joint proximal to it.

(ae) Corrected or uncorrected congenital deformity of the hand, polydactyly or syndactyly.

(af) Any tendon injury, vascular injury, fractures and nerve injury(s), corrected or uncorrected, with functional deficit.

(ag) Polydactyly/ syndactyly UNFIT)

(iii) Angular deformities: Elbow

(aa) Cubitus Valgus - Carrying angle > 15 degrees in male and > 18 degrees in female.

(ab) Cubitus Varus - Varus of > 05 degree.

(ac) Cubitus Recurvatum – more than 10 degrees.

(ad) Flexion Deformity of any degree.

(iv) Dislocations/ Recurrent Dislocations

(aa) Any dislocation of shoulder/ elbow/ wrist with or without history of corrective surgery will be UNFIT.

46(d) **Miscellaneous conditions of the extremities considered UNFIT**

(i) Symptomatic osteochondritis of the tibial tuberosity (Osgood-Schlatter Disease) within the past 12 months.

(ii) Stress fractures, either recurrent or a single episode occurring during the past 12 months.

(iii) Acromio-clavicular separation

(iv) Joint replacement or resurfacing of any site.

(v) Neuromuscular paralysis, weakness, contracture, or atrophy.

(vi) History/clinical evidence of healed or current osteomyelitis.

(vi) Osteochondral defects, osteochondritis dissecans.

(vii) History of any cartilage surgery, including but not limited to cartilage debridement or chondroplasty, chondromalacia, microfracture, or cartilage transplant procedure.

(viii) History of post-traumatic or exercise-induced compartment syndrome.

(ix) Osteonecrosis of any bone.

(x) Any joint laxity, unstable joint, ligamentous injuries, any surgery of the joint for any disease/disability, malformation/deformity, cysts, arthritis.

46(e) **FRACTURES**

UNFIT

(i) Current malunion or non-union of any fracture.

(ii) Current retained hardware (including plates, pins, rods, wires, or screws).

(iii) Congenital or post-traumatic orthopedic deformities abnormalities corrected or otherwise:

(iv) Malunited fractures of clavicle with shortening, restricted shoulder movements, restricted scapular protraction/retraction.

(v) Healed fractures with significant cosmetic deformity, any angulation, rotational deformity or shortening.

(vi) Healed Fractures of upper limb less than six months of injury and fractures of lower limbs less than 12 months of injury.

(vii) Fractures involving articular surfaces or with neuro/ vascular deficit.

46(f) **Cervical Rib**

(i) Unfit when associated with vascular obstruction and/or

neurological involvement by clinical examination and relevant investigations.

(ii) Torticollis (Wry Neck) will be UNFIT.

47. EAR NOSE AND THROAT

47(a) Examination of ear, nose and throat is required to exclude conditions which will impede optimal performance of Armed Forces personnel in various situations in peace and war.

47(b) **History.** History of otorrhoea, hearing loss, vertigo including motion sickness, tinnitus to be elicited. History suggestive of allergic rhinitis/ nasal polyps, ozoena, recurrent epistaxis, dysphonia, dyspnoea, dysphagia and history of any surgery of ear, nose, throat, neck is also required to be elicited. Family history of hearing loss is also required to be elicited.

47(c) **Examination.** To avoid overlooking or missing minor functional and anatomical abnormalities, the following points should be observed when examining the ears, nose and throat:-

(i) A good illumination.

(ii) A set pattern of examination.

(iii) An adequate view of all parts under examination.

47(d) **Nose and Paranasal Sinus.** A Thudicum nasal speculum may be used to aid nasal examination. Septum will be assessed for deviation remarkable enough to cause persistent airway obstruction. Nasal airway assessment should be done by cold spatula test. It is important to look for perforations in the nasal septum. The nasal mucosa will be assessed for signs of inflammatory diseases of the nose/ paranasal sinuses like hyperemia, mucopurulent discharge, atrophy and crusting. Plain radiographic examination of the sinuses is fraught with inconsistencies and is not indicated. Presence of nasal polyps/growth/ulceration will be assessed.

47(e) **Oral Cavity and Throat**

(i) **Mouth**. Look for submucous fibrosis, leukoplakia, erythroplakia, ulcerative or exophytic lesions in the oral cavity.

(ii) **Pharynx**. Tonsils will be assessed for signs of chronic inflammation in the form of hyperemia of anterior faucial pillars and pus/debris in the tonsillar crypts. Presence of any ulcer/mass lesion should be looked for. Presence of pooling of saliva indicating dysphagia to solids/ liquids will be noted.

47(f) **Larynx**. Presence of severe change in voice, stridor/ dyspnoea will be noted.

47(g) **Ear.** All candidates will be instructed to get ear wax removed under their own arrangements before reporting for medical examination. However, if wax is present on examination which is impeding adequate visualization of external auditory meatus/ tympanic membrane, the candidate will be given time to get the wax removed and will be re-examined. In case, it is not possible to re-examine the candidate, he/she should be referred to an ENT centre convenient to the candidate for re-examination without declaring him/ her unfit. The candidate will be specifically instructed to get the wax removed before reporting for this re-examination.

47(h) **Auricle and Mastoid Region**. The pinna will be assessed for gross deformity which will hamper wearing of uniform/ personal kit/protective equipment or which adversely impacts military bearing. The preauricular and postauricular regions should be carefully examined for scars and deformities due to past operations. Cauliflower ear for wrestlers and boxers may be accepted provided there is no functional deficit.

47(j) **External Auditory Meatus**. It is inspected by pulling the auricle upwards, backwards and outwards to straighten the external canal. Presence of wax, foreign body, exostosis, growth, otomycosis or discharge is noted.

47(k) **Tympanic Membrane**. Tympanic membrane must be inspected quadrant-wise by otoscopy. The ear is examined for perforation, scars, tympano-sclerotic plaques or retraction of membrane. Mobility of the tympanic membrane will be assessed by Valsalva maneuver.

47(l) **Assessment of Hearing**. Good hearing in both ears is a must. Assessment of hearing is to ensure adequate bilateral hearing acuity and freedom from any disease of the ear or upper respiratory passage. Unilateral deafness limits optimal sound perception and ability to locate the direction of sounds.

47(m) Auditory acuity is assessed without the use of any hearing aid. Testing for Conversational Voice (CV) is done for each ear separately. The candidate stands in a quiet room at a distance of 610 cm from the examiner with his back turned towards the latter. This prevents lip reading. An assistant will mask the non-test ear. Masking is done by placing a stiff piece of paper over the auricle and using the pulp of the fingertip to make a gentle circular rubbing motion producing a continuous rustling sound. CV test will be done using spondee words (bi-syllable words with equal phonetic emphasis on both components e.g., football). The distance at which the candidate can repeat

fifty percent of the words correctly will be noted as CV.

47(n) **Instructions for ENT Specialist.** Detailed ENT examination by the Specialist is indicated in those cases where the candidate has been made unfit by a Recruiting MO.

47(o) **Nose and Paranasal Sinus.**

(i) Nasal cavity and naso-pharynx may be assessed by nasal endoscopy.

(ii) The septum will be assessed for deviation remarkable enough to cause persistent airway obstruction.

(iii) It is important to look for perforations in the septum. The size of the perforation and presence of whistling noise on breathing will be noted.

(iv) The nasal mucosa will be assessed for signs of inflammation of nose/para-nasal sinuses like hyperemia, mucopurulent discharge, atrophy and crusting. Presence of mucopus in the middle meatus will be noted. Presence of growth, polyps, granulomatous lesion and ulcer will be assessed.

47(p) **Oral Cavity and Throat.**

(i) **Mouth.** Look for submucous fibrosis, leukoplakia, erythroplakia, ulcerative or exophytic lesions in the oral cavity.

(ii) **Pharynx.** Tonsils will be assessed for signs of chronic inflammation in the form of hyperemia of anterior faucial pillars and pus/ debris in the tonsillar crypts. Presence of any ulcer/ mass lesion should be looked for. Presence of pooling of saliva indicative of dysphagia to solids/ liquids will be noted.

(iii) **Larynx.** Presence of remarkable changes in voice, stridor/ dyspnoea will be noted and considered unfit.

47(q) **Ear.** If wax is present on examination which is impeding adequate visualization of external auditory meatus and tympanic membrane, the Specialist may attempt to remove the wax provided it is easily removable without possibility of injury to the external auditory meatus and tympanic membrane. If wax is not easily removable, the candidate will be advised to report after getting the wax removed.

(i) **Auricle and Mastoid Region.** The pinna will be assessed for gross deformity which will hamper wearing of uniform/personal kit/

protective equipment or which adversely impacts military bearing. The preauricular and postauricular regions should be carefully examined for scars, sinuses and deformities due to past operations.

(ii) **External Auditory Meatus.** Presence of wax, foreign body, exostosis, growth, otomycosis or discharge is noted.

(iii) **Tympanic Membrane.** Tympanic membrane must be inspected quadrant-wise by otoscopy and if required by oto-endoscopy/ oto-microscopy. Perforations, scars, tympanosclerotic plaques or retraction of membrane will be carefully looked for. Mobility of the tympanic membrane will be assessed by Valsalva maneuver, Pneumatic Otoscopy and if required by Tympanometry.

(iv) **Assessment of Hearing.** Good hearing in both the ears is a must. Assessment of hearing is to ensure adequate bilateral hearing acuity and freedom from any disease of the ear or upper respiratory passage. Unilateral deafness limits optimal sound perception and ability to locate the direction of sounds. Auditory acuity is assessed without the use of any hearing aid.

(v) **Free Field hearing Tests.** For Conversational Voice (CV) and Forced Whisper (FW) voice tests, each ear must be tested separately. It is necessary to standardize the technique, to make findings reproducible and comparable. The candidate should stand in a quiet room at 610 cm from the examiner with his back turned towards the latter. This prevents lip reading. An assistant will mask the non-test ear. Masking is done by placing a stiff piece of paper over the auricle and using the pulp of fingertip to make a gentle circular rubbing motion producing a continuous rustling sound. CV will be done using spondee words (bi-syllable words with equal phonetic emphasis on both components). The distance at which the candidate can repeat 50% of the words correctly will be noted as CV. FW is carried out by whispering with the residual air at the end of an ordinary expiration. The candidate is asked to repeat the spondee words spoken by the examiner. The distance at which the candidate repeats 50% of the words correctly is recorded as FW.

(vi) **Tuning Fork Tests.** Rinne test and Weber test may be employed to ascertain the type of hearing loss present.

(vii) **Pure Tone Audiometry (PTA).** PTA will be performed for detailed assessment of hearing acuity wherever indicated. Audiometry will be done in a sound treated room and the audiometer will be

calibrated as per standard guidelines. Thresholds will be noted for each octave interval from 0.5, 1, 2, 3, 4, 6, and 8 kHz for AC and from 0.5 to 4 kHz for BC, where indicated.

(viii) **Impedance Audiometry (Tympanometry).** Tympanometry will be done to assess middle ear function and Eustachian tube function, where indicated.

47(r) **Grounds of Rejection/ Acceptable standards.** Candidates who suffer from any of the defects mentioned below will be declared unfit. However, any other condition in the ear, nose, throat and neck which is likely to hamper the individual in carrying out his military training/duties or adversely affects his military bearing will also be a cause for rejection.

47(s) **Ear.** The following defects of the ear will be declared Unfit: -

(i) Gross deformity of pinna which hampers wearing of uniform/personal kit/protective equipment or which adversely impacts military bearing.

(ii) Exostosis, atresia/narrowing of EAM, wax (present even after the candidate is given time for its removal) or neoplasm preventing a proper examination of the eardrum.

(iii) Current Otitis Externa

Otitis Media

(iv) Current Otitis Media of any type will entail rejection.

(v) Evidence of healed Chronic Otitis Media in the form of Tympanosclerosis or scarring affecting less than 50% of the Pars Tensa of tympanic membrane (TM) will be assessed by ENT Spl and will be acceptable if PTA and Tympanometry are normal.

(vi) Healed healthy scars of the neo-tympanic membrane involving less than 50% of pars tensa due to Tympanoplasty-type 1 (with or without Cortical Mastoidectomy) for Chronic Otitis Media (Mucosal type) and Myringotomy (for Otitis Media with Effusion) may be accepted, on production of valid documentary evidence for the surgery undergone, and if PTA & Tympanometry are normal. Assessment of operated cases will be done only after a minimum of 12 weeks, and should meet the following criteria, before declaring the candidate FIT:

(vii) There should be no residual perforation.

(viii) Tympanic membrane is mobile on pneumatic otoscopy.

(ix) There should be no hearing impairment on the Free Field Hearing Test (CV & FW).

(x) Pure Tone Audiometric thresholds are within normal limits.

(xi) Tympanometry shows Type ‘A’ Tympanogram.

(xii) Any other middle ear surgery (including ossiculoplasty, stapedectomy or any type of canal – wall down mastoidectomy) is not acceptable.

(xiii) Any implanted hearing devices such as cochlear implants, bone anchored hearing aids etc, are not acceptable.

(xiv) **Deafness due to any cause.** Any reduction less than 610 cm in CV/FW is not acceptable. Wherever PTA is indicated, and thresholds are obtained, the hearing thresholds by air conduction at 500 Hz to 8000 Hz should be 25 dB or better. Isolated lower thresholds up to 30 dB may be accepted provided the ear is otherwise normal.

(xv) **Peripheral vestibular dysfunction.** History of motion sickness or any evidence or peripheral vestibular dysfunction due to any cause will entail rejection.

47(t) **Nose and Paranasal Sinuses**. The following defects of nose and para nasal sinuses will be declared unfit: -

(i) Gross external deformity of nose causing functional deformity may be rejected if it adversely impacts nasal airway. Minor deformities of dorsum and nasal tip should not be a cause for rejection.

(ii) Obstruction to free breathing because of a marked septal deviation is a cause for rejection. Correction by septoplasty is acceptable if reviewed four weeks after surgery and provided there is an adequate airway. Post-op intranasal adhesions not compromising airway is acceptable. Nasal polyposis noted during examination or after any surgery for polyposis is unfit.

(iii) Asymptomatic anterior (cartilaginous) septal perforation may be accepted by ENT Spl provided chronic granulomatous diseases have been ruled out and nasal mucosa is healthy.

(iv) Atrophic rhinitis entails rejection.

(v) **Allergic Rhinitis/ Vasomotor rhinitis**.The potential hazards of

allergic rhinitis include airway compromise; discomfort and distraction; reduced sense of smell; ear and sinus barotraumas with potential incapacitation and possible use of easily accessible, unauthorized over the counter medication. Symptomatic allergies with sneezing could be a particular hazard in high speed and low-level flight. Barotraumas as well as infectious complications can lead to prolonged periods of activity restriction, reducing readiness and operational effectiveness. Allergic rhinitis often occurs seasonally in direct response to elevated pollens, but it can also occur perennially. Therefore, it is not acceptable and history/ clinical features of allergic rhinitis entail rejection. Vasomotor rhinitis is not acceptable for the same reasons.

(vi) Any infection of nose/paranasal sinuses will be a cause for rejection. Such cases may be accepted following successful treatment, if there is no evidence of chronic rhino-sinusitis.

(vii) Current nasal polyposis is a cause for rejection. However, candidates diagnosed with antro-choanal polyp may be accepted after Surgery (endoscopic polypectomy) on production of valid documentary evidence for the surgery undergone and provided there is no residual disease, mucosa is healthy, and histopathology is benign and non-fungal. Such evaluation will be done a minimum four weeks post-surgery. Ethmoidal polyposis will be declared **UNFIT** even after surgery.

47(u) **Oral Cavity**

UNFIT.

(i) All current and operated cases of leukoplakia, erythroplakia, submucous fibrosis, ankyloglossia, oral carcinoma, current oral ulcers/growth, mucus retention cysts and trismus due to any cause is unfit. Cleft palate is not acceptable even after surgery.

FIT.

(ii) Completely healed oral ulcers and operated cases of mucus retention cyst only after surgery, with no recurrence and benign histology. Such evaluation will be done after a minimum four weeks post-surgery.

47(v) **Pharynx**

(i) Any ulcerative/ mass lesion of the pharynx will entail rejection.

(ii) Evidence of chronic tonsillitis is a cause for rejection. They may be accepted after tonsillectomy provided histology is benign. Such evaluation will be done a minimum four weeks post-surgery. Bilateral symmetrical tonsillar enlargement may be acceptable, provided it is not a cause for persistent dysphagia / odynophagia.

47(w) **Larynx**

(i) Persistent hoarseness, dysphonia, chronic laryngitis, vocal cord palsy, laryngeal polyps, growths are not acceptable.

48. OPHTHALMOLOGY

48(a) **Introduction.** To be declared fit for admission/ commission, the candidate must be in good visual health and free from any disability likely to interfere with the efficient performance of duty in the Armed Forces. Visual defects and systemic ophthalmic conditions are among the major causes of rejection and hence a thorough and accurate eye examination is of great importance in selecting personnel into the Armed Forces Medical Services.

To reduce inter-observer error and ensure maximum reliability, certain examination techniques are recommended. The examination is to be conducted in the following five stages: -

(i) History and declaration by the candidate.

(ii) Determination of visual acuity for distance and near vision and proper examination to assess colour vision.

(iii) Ocular muscle balance tests.

(iv) Slit Lamp examination.

(v) Fundus examination, fields and other examinations, as required.

48(b) **Family and Personal History**

(i) Specific questions should be asked for, to elicit family history of pathological myopia, night blindness, and any other relevant disease.

Personal history should include:

(ii) History of wearing spectacles/contact lenses, duration for which he has been wearing this correction and the number of times the refractive power was changed in the last 2 years.

(iii) History of surgical correction of refractive errors such as

(aa) Photorefractive Keratectomy (PRK)

(ab) LASER in situ keratomileusis (LASIK)

(ac) Small Incision Lenticule Extraction (SMILE)

(ad) Collagen cross-linking

(ae) Phakic IOLs etc.

(iv) History of non-surgical refractive corrections such as Orthokeratology.

(v) History of eyestrain, diplopia, frequent attacks of redness of the eyes, or having difficulty in seeing in the dark.

Method Of Examination

Distant Vision

48(c) **Testing conditions.** Distant visual acuity is judged by standard test types, read by each eye separately first, and then together without glasses at 6 meters. Digital, auto-projector charts should be used, if possible. The test type should be illuminated to the minimum of 10-foot candles (9 - 18W standard company Tube light fitted). If the illumination is less, the visual acuity cannot be assessed correctly. Distance between the candidate and the test type should be exactly 6 meters. The lettering in the test should not be faded and must be against a clear white background. If the examination room is small, Snellen's test type with standard illumination should be fixed to the wall above the seating position of the candidate and a mirror be placed at 3 metres from which the candidate is directed to read the chart.

48(d) **Procedure of assessment**

(i) The eye that is not being tested should be occluded with an opaque card without pressure.

(ii) In the Snellen's test type of charts, the distance at which a particular letter should be read by a person with standard vision is given against that letter. For example, if a person at 6 meters can read only the letter that is to be read from 60 meters, his vision is recorded as 6/60. Similarly, 6/36, 6/24, 6/18, 6/12, 6/9 or 6/6 is recorded according to the number on the smallest line read.

(iii) If he cannot even read the largest at 6 meters, the distance is

reduced by a meter each time till he can read the top letter. If he reads it at 1 meter, his vision is recorded as 1/60. If his vision is less than 1/60 finger counting close to the face is checked. If even finger counting is not possible, then his ability to recognize hand movement (HM) is recorded.

(iv) If even hand movements are not appreciated then his perception of light (PL) projected from four quadrants is tested and recorded.

(v) Visual acuity should be assessed by all Optotypes of Snellen's chart and randomly to minimize errors in recording vision. To prevent memorizing, the candidate can be asked to read any line in the reverse direction (right to left).

(vi) Astigmatic individuals may be able to read letters indistinctly or may misidentify them because of indistinct images on the retina. There may be a desire to tilt the head to one side for better focus. Such individuals may be tested with cylindrical lens or stenopaic slit.

(viii) In cases where refractive status needs to be assessed, manual retinoscopy under cycloplegia must be performed.

48(e) **Common Errors in testing.** Following are the common sources of error in testing distant vision: -

(i) The chart is not 6 meters from the candidate.

(ii) Too much light reduces visual acuity particularly if glare is reflected from the surface of the test type, or if extraneous light enters the candidate's eye.

(iii) The candidate views the chart with both eyes open, or memorizes letters before testing starts.

(iv) The candidate is allowed to read the chart with glasses on before the unaided acuity is determined.

(v) The candidate or examiner presses on the occluded eye.

(vi) The candidate is allowed to cover his own eye, and peeps from behind the occluder or between his fingers.

(vii) The candidate is allowed to adjust his eye or adopt an unusual head posture.

(viii) Candidates may be wearing fine contact lenses or may have

undergone corneal refractive surgeries or orthokeratology which are not detected.

(ix) Insufficient time for the candidate to relax his accommodation prior to making him read the charts.

(x) The examiner's inability to recognize guessing or memorizing on the part of the candidate.

Near Vision

48(f) **Standard Test types.** For recording near visual acuity, Snellen's or Jaegers test types are used. The candidate is seated in a chair with good light coming from behind the left shoulder and is asked to hold the card at approximately 33 cm distance and asked to read the words and sentences. The number of the smallest type printed on the card that he can read comfortably is the near vision. It is recorded as NV = N6 (Snellen's), if he reads the smallest print marked 6.

48(g) **Colour Vision**

(i) Colour perception for entry into Armed Forces Medical Services is based on Ishihara Charts as it can differentiate between CP II, III and IV.

Methods of Examination and assessment of Colour Vision by Ishihara Book

(ii) **Procedure**

The book should be held at a distance of 75 cm from the candidate. The test should be carried out in ordinary daylight, but not directly in the sun. Artificial illumination, if used, will be a tube light with daylight filter. No candidate should be rejected unless tested in daylight. Each plate should be shown for 2 to 3 seconds only. Answers given should be noted. Next plate should be shown thereafter. Care should be taken that the charts are not unduly faded or otherwise marked. Candidates should not be allowed to touch the charts. No fixed sequence should be followed to guard against candidates memorizing the book.

(iii) **Assessment.**

Colour Perception Normal (CP II). The numbers on all plates from plate no. 1-17 and 22-25 should be read correctly. No number should be read on plates 18-21 as they do not have any number.

Colour Perception Defective Safe (CP III). Plates 22 to 25 are read correctly (one figure may be clearer than the other) and some of the plates are misread.

Colour Perception Defective Unsafe (CP IV). The individual is unable to read even plates 2-9 and 22-25.

48(h) **Night Vision**

Night Vision test is not done as a routine. In case the candidate gives family history of night blindness or gives symptoms of night blindness or shows signs suggestive of defective night vision, night vision capacity is tested to rule out organic pathology leading to night blindness. It can be assessed with an electroretinogram if required clinically.

48(j) **Ocular Muscle Balance**

This examination is conducted to detect any manifest or Latent Squint.

48(j)(i) **Ocular Movements and Head Posture.** The eyes should move fully and normally in all directions, and no diplopia should be elicited in any quadrant. Particular attention should be paid to candidates with torticollis, because to abolish diplopia and maintain binocular single vision, the individual may adopt an abnormal head posture.

48(j)(ii) **Nystagmus.** In testing nystagmus, special care should be taken particularly to keep the fixation object inside the normal binocular field of vision. Physiological nystagmus can almost invariably be demonstrated in extreme positions of gaze. Latent nystagmus is demonstrated by covering one eye.

Tests for squint.

48(j)(iii) **Hirschberg Test (HBT).** It is used as an initial screening for the evaluation of squint and gives a rough estimate of manifest squint.

(aa) **Procedure.** A pen torch light held at a distance of 33 cm is shone into the eyes of the candidate and he/she is asked to focus at it. The deviation of corneal light reflex from the centre of the pupil is noted in the squinting eye by the examiner.

(ab) **Inferences.** If the corneal light reflex is seen in the centre of the pupil in both eyes, it is orthophoria. If light reflex is seen at the temporal part of cornea from pupillary border to limbus, it is

esotropia while if it is seen at nasal part of cornea from pupillary border to limbus, it is exotropia. To estimate the amount of deviation, the position of light reflex is noted, at the border of pupil – 15° deviation, between the border of pupil and limbus – 30° deviation and at or outside limbus – 45° deviation.

48(j)(iv)**The Cover-Uncover Test.**

(aa) A pencil and a suitable cover such as a card are required. Both eyes must be tested separately.

(ab) **Technique.** Cover the apparently fixing eye completely. Hold the pencil vertically with the point 33 cm from the candidate's face, between his eyes and level with the root of his nose. Ask the candidate to focus on the tip of the pencil.

(ac) Cover test (Stage 1): When the fixing eye is occluded, the examiner may or may not observe the non-occluded eye move to pick up a fixation. This indicates the presence or absence of any tropia respectively.

(ad) Uncover test (Stage 2): Now, quickly remove the cover, and observe any movement of the previously covered eye. It may not show any movement, or it may move either inwards or outwards. It indicates the absence or presence of any phoria respectively.

(ae) Repeat the same test for distance vision, i.e., at 6m.

Interpretation of Results

(af) If there is no movement of the eyeball either in stage 1 or stage 2 of the test, it indicates that the muscle balance is normal, and fusion is achieved with effort. Such a stage is called orthophoria.

(ag) However, if the movement is inwards or outwards in stage 1, the case is diagnosed to suffer from divergent or convergent squint, respectively.

(ah) If no movement is observed in Stage 1, the cover is removed, and any movement seen in that eye is consistent with a latent squint (phoria).

(aj) Not only the movement but the rate of recovery is also noted. The recovery can be rapid or slow, immediate, or delayed. Now the second eye is tested in similar fashion. The cover test is to be done for distant and near vision separately.

(ah) **Recording of Results**. The degree of movement is recorded by letters 'S' if slight and 'M' if moderate. Second and third letters indicate lateral or medial deviation. Fourth and fifth letters show rate of recovery, and the last two letters indicate whether left or right or both eyes. Slight latent divergence with rapid recovery in both eyes will be recorded as "SLDRRBE"

48(j)(v)**Maddox Rod Test.** This test only needs to be done when there is some suspicion in the cover-uncover test and is used to assess and quantify the amount of deviation.

(aa) **Technique and Inferences.** The candidate, wearing a trial frame, is made to sit 6 meters from a spotlight in a dark room. The Maddox rod is placed in one eyepiece of the frame, the other eye being left uncovered. With the rod placed horizontally, a vertical beam of light is seen by one eye while the uncovered eye sees the spotlight. The position of the beam relative to be spotlight is noted, preferably on a scale graduated in prism dioptres and mounted on the spotlight apparatus.

(ab) To determine horizontal deviation, the rod is placed with grooves horizontally in front of the right eye so as to produce a vertical red line. The left eye fixes a spotlight at 6 meters distance. If the line is seen to the left of the spotlight, it indicates exophoria and if to the right of the light, esophoria. The amount of deviation can be measured by placing prisms of increasing strength in front of the right eye with bases in for exophoria and bases out for esophoria until the red line coincides with the spotlight.

(ac) To determine vertical deviation, the rod is then placed vertically in front of the right eye, so as to produce a horizontal red line, which will pass through the spotlight if there is no vertical imbalance. If the red line is below the spotlight there is right hyperphoria, and if the red line is passing above there is left hyperphoria. The amount of deviation is measured by placing a prism of increasing strength in front of the right eye with bases down for right hyperphoria or up for left hyperphoria until the red light traverses the spot.

(ad) If cyclophoria is present, when the Maddox rod is vertical, the line instead of running horizontally will run obliquely. Degrees through which the rod has to be tilted in order to make the line of light appear vertical, will indicate the amount of torsion. The obliquity is more easily recognized if two Maddox rods are used, one before each eye. Two lines seen are parallel to each other in the absence of cyclophoria. Great care must, of course, be taken that the rods are set vertically or horizontally in the trial frame.

(ae) Instead of using prisms, the test may be used in conjunction with the Maddox tangent scale where the deviation is determined by asking the candidate to observe which number on the scale the red line traverses.

(af) The test should also be done with the spotlight at 33 cm. If the Maddox rod is placed in front of the left eye the interpretation will change accordingly.

(ag) **Recording of results.** To differentiate the two tests, results of the Maddox Rod test at 6 meters and at 33 cm are recorded separately. (Maddox Rod Test 6 m - Exo 2 D, 33 cm - Exo 10 D)

48(j)(vi)**Common Errors**

(aa) The candidate shuts one eye.

(ab) The candidate does not relax to focus on the distant spotlight. Too high a degree of esophoria is indicated, which does not match the deviation detected by the cover test.

(ac) Multiple red lines seen. Aberrant light sources are present if the examination room cannot be blacked out, the proper red line should be indicated by flashing the spotlight on and off a few times. White Maddox Rods are available for use with a red spotlight, aberrant light leaks producing white lines and the spotlight, a red line.

(ad) Falsification by the candidate. Heterophoria candidates who are familiar with the test may declare immediately that the line passes through the light. If following the cover test, this appears unlikely, a prism should be placed in an appropriate direction before the Maddox Rod. If orthophoria is still claimed, a

closer check of the candidate’s responses is indicated.

48(j)(vii)**Worth 4 Dot Test**. It consists of an illuminated box with four apertures for coloured glasses - one red, two green and one white. The candidate at 6 meters distance wears a red glass before right eye and green before left eye, so that he sees red with one eye, green with the other and white with both. If he/she sees four dots (one red, two green and one red-green) he/she has binocularity. If he/she sees five dots (two red and three green) he/she uses both the eyes but has diplopia. If he/she sees two reds, it is left eye suppression and if three greens only, it is right eye suppression.

48(j)(viii)**Convergence Tests**

Convergence is divided into two – Objective convergence and Subjective convergence.

(aa) **Objective Convergence.** The assessment of convergence is made without taking the help of the individual under examination. It is more reliable and more quickly done.

(ab) **Subjective Convergence.** In assessment of subjective convergence, the assistance of the candidate is taken and it is a good corroborative finding to objective convergence. The test requires a special instrument called RAF rule.

(ac) **Measurement.** Both objective and subjective convergence can be measured by RAF Near Point Rule.

(ad) **Objective Convergence.** On the RAF rule, there is a scale with an attachment, a small box with a black dot on white background. The instrument is placed over the infra orbital margin and the candidate is asked to keep looking at the black dot. The box is then moved towards his nose and the examiner watches the ocular movements of the candidate. The point where one of the two eyes stops moving inwards or suddenly shoots out is taken as the point of convergence. The pointer reading on the scale is noted and is expressed as - convergence: 8 cm. If the reading is very high e.g., beyond 11 to 12 cm, the test should be repeated after explaining to the individual what is required of him/her.

(ae) **Subjective Convergence**. Same technique as above but in this test, the candidate is asked to indicate when the dot

becomes doubled and that point is considered the point of convergence.

48(j)(ix)**Accommodation**

(aa) **Measurement of Accommodation.** On the RAF rule, there is a scale with an attachment, a small box with a black letters/ numbers on white background. The instrument is placed over the infra orbital margin and the candidate is asked to keep looking at the letters/ numbers. The box is kept 20 cm away and he/she is instructed to read letters. Then the box is moved towards the nose and the candidate is instructed to keep looking at the letters and inform the examiner when the letters start blurring. It is denoted as — Accommodation Rt Eye: 12cm, Lt Eye: 12cm. To confirm the above, the box is then moved from the nearest position to the eye to the far end with instruction to the candidate to inform the examiner when he/ she can read letters.

48(j)(x)**Slit Lamp Examination of The Eyes And Their Adnexae**

(aa) **External Examination**. In external examination, where magnification is required, the examiner should use a Slit-lamp biomicroscope and in case of non-availability, a Corneal loupe or an Ophthalmoscope with a plus 20-dioptre lens in the aperture.

(ab) **Lids, lashes and lacrimal apparatus.** Any ptosis, eyelid dysfunctions or abnormal condition of the lacrimal apparatus should be noted.

(ac) **Conjunctiva.** The bulbar and palpebral conjunctiva, including the fornices, should be examined for signs of hyperaemia, infection or growth.

(ad) **Cornea and Anterior Chamber.** The presence of corneal opacities, vascularization, radial scars or scars of operations should be carefully noted. Depth and contents of the anterior chamber should also be noted. Also look if the individual is wearing contact lenses including tinted contact lenses.

(ae) **Iris and Pupils**. Any abnormality of colour or configuration of the iris, or signs of past iritis should be noted. Any inequality of the pupils should be noted, e.g., mydriasis, miosis, or irregularity due to posterior synechiae. Any abnormal

reaction to light or accommodation/convergence should also be noted. Pupils should be equal, circular, moderate in size and react to light promptly.

(af) **Lens.** The presence of any lenticular opacities, if present, must be noted along with their number and location.

48(j)(xi)**Fundus Examination**

(aa) Ophthalmoscopic examination by direct ophthalmoscope/slit lamp biomicroscopy using 78/90 D lens is carried out to exclude any abnormality in the fundus and media.

(ab) The normality of the disc and the vascular pattern in the disc and its edges, C:D ratio, papilledema or colour change in and around the disc and pigmentary changes elsewhere provide valuable clues to various systemic diseases and must be carefully noted. Any abnormal vascular pattern, macular scarring, haemorrhages or exudates in the retina will be noted.

48(j)(xii)**Visual Fields**

(aa) Visual fields must be normal when examined by hand movements, i.e., confrontation method, each eye being tested separately, as it fixes the eye of the examiner. In case of doubt, automated perimetry or any other test, as felt appropriate, by the examining authority will be carried out.

48(k) **Declaration by Candidate.**

All candidates reporting for medical examination will give an undertaking confirming the following:

(i) History of any kerato-refractive corrective procedure carried out. If yes, details thereof.

(ii) Whether the individual or his/her parents suffer from night blindness.

48(l) **Visual Standards**

48(l)(i) Visual standards for entry into Armed Forces Medical Services as Officers/ cadets will be as per the standards promulgated as under.

48(l) (ii) Visual standards for males and females will be the same for the specific category of cadets or Officers. For all categories, Best Corrected Visual Acuity will be 6/6 for each eye.

48(l) (iii) After any extra-ocular surgery, a symptom free period of minimum 03 months is admissible. However, after LASIK or equivalent keratorefractive correction procedures, a minimum of 12 months is required.

48(l) (iv) **<u>Visual standards for Cadet entry into AFMC and MNS.</u>** Colour vision permitted will be CP II. Visual standards will be as follows:

(aa) Uncorrected VA 6/36 & 6/36; BCVA 6/6 & 6/6.

(ab) Myopia ≤ -3.50 D Sph, including max astigmatism ≤ +/- 2.0 D Cyl.

(ac) Hypermetropia ≤ +3.50 D Sph, including max astigmatism ≤ +/- 2.0 D Cyl.

<u>LASIK & equivalent.</u>

(ad) Not Permitted - in candidates less than 20 years of age.

(ae) Permitted - in candidates in whom surgery has been done at age of more than 20 years provided the acceptable standards of LASIK laid down as per para 46 (e) (vii) are fulfilled.

(af) Colour vision - CP II

48(l) (v) **<u>Visual standards for Civilian MBBS graduates seeking admission in AFMS institutes (Priority V candidates).</u>**

(aa) Uncorrected VA 3/60 & 3/60; BCVA 6/6 & 6/6.

(ab) Myopia ≤ -5.50 D Sph, including max astigmatism ≤ +/- 2.0 D Cyl.

(ac) Hypermetropia ≤ +3.50 D Sph, including max astigmatism ≤ +/- 2.0 D Cyl.

(ad) LASIK & equivalent permitted provided the acceptable standards of LASIK laid down as per para 46 (e) (vii) are fulfilled.

(ae) Colour vision - CP II.

48(l)(vi)**<u>Visual standards for Officer entry into AMC/ADC/MNS.</u>**

(aa) Uncorrected VA 3/60 & 3/60; BCVA 6/6 & 6/6.

(ab) Myopia ≤ -5.50 D Sph, including max astigmatism ≤ +/- 2.0 D Cyl.

(ac) Hypermetropia ≤ +3.50 D Sph, including max astigmatism ≤ +/- 2.0 D Cyl.

(ad) LASIK & equivalent permitted provided the acceptable standards of LASIK laid down as per para 46 (e) (vii) are fulfilled.

(ae) Colour vision - CP II.

48(l) (vii) **LASIK or Equivalent**. In order to be made Fit, the following criteria will have to be met: -

(aa) Age more than 20 yrs at the time of surgery.

(ab) Minimum twelve months post LASIK.

(ac) Central corneal thickness equal to or more than 450 μ.

(ad) Axial length by IOL master equal to or less than 26 mm.

(ae) Residual refraction of equal to or less than +/- 1.0 D including cylinder (if acceptable for category applied for).

(af) Normal healthy retina.

(ag) LASIK and equivalent procedures will be permitted. However, earlier procedures like Radial Keratotomy or equivalent will be permanently unfit.

(ah) Any candidate who has undergone any Keratorefractive procedure will have a certificate from the centre where he/she has undergone the procedure specifying the date and type of surgery.

(aj) Equipment like IOL master (or equivalent) and Pachymeter are usually present at Command Hospitals or equivalent. Therefore, the present policy of making such candidates unfit at smaller hospitals and referring them to Sr Advisor Ophthalmology will continue.

48(m) **Acceptable Standards/ Grounds of Rejection.**

Candidates who suffer from any of the ocular diseases will be dealt as described in the succeeding paragraphs.

Lids and Adnexa

48(m)(i) **Lid disorders**

FIT

(aa) Mild ptosis not affecting vision/visual field in day or night.

UNFIT

(ab) Any defect or deformity of the lids or other disorders affecting eyelid function, including ptosis, sufficient to interfere with vision, require head posturing, or impair protection of the eye from exposure.

48(m)(ii) **Entropion/ Ectropion**

FIT

(aa) Mild ectropion and entropion not hampering day to day functioning in anyway.

UNFIT

(ab) All other cases of ectropion and entropion.

48(m)(iii) **Naso-Lacrimal Occlusion**

FIT

(aa) Candidate with symptom free period of at least twelve weeks after surgery for naso-lacrimal occlusion.

UNFIT

(ab) Symptomatic with Epiphora/ Mucocele.

48(m)(iv) **<u>Conjunctiva</u>**

UNFIT

(aa) All cases of pterygium.

48(m)(v) **Cornea**

FIT

(aa) Small nebular corneal opacity in the periphery not affecting the vision or visual field.

UNFIT

(ab) Any corneal dystrophy or degeneration or current or recurrent keratitis.

(ac) Corneal opacification from any cause that is progressive or reduces vision.

48(m)(vi) **Lens**

FIT

(aa) Small stationary lenticular opacities in the periphery like congenital Blue Dot cataract not affecting the visual axis/visual field (should be less than ten in number and central area of four mm to be clear).

UNFIT

(ab) Candidates who have undergone cataract surgery with or without IOL implantation.

48(m)(vii) **Pupil**

UNFIT

(aa) Any abnormal pupillary reaction to light or accommodation.

(ab) Asymmetry of pupil size greater than 2 mm.

48(m)(viii) **Uvea**

UNFIT

(aa) Any type of active or healed uveitis (iritis/ iridocyclitis/ choroiditis).

48(m)(ix) **Retina**

FIT

(aa) A small healed chorioretinal scar in the retinal periphery not affecting the vision and not associated with any other complication.
(ab) A small lattice in the periphery with no other complications.

UNFIT

(ac) Any lesion in the central fundus.

(ad) Night blindness**.** Certificate to be signed by the candidate.

48(m)(x) **Optic Nerve**

UNFIT

(aa) Candidates with signs suggestive of current or sequelae of Optic nerve inflammation/ swelling or optic atrophy.

(ab) Optic discs with suspected deep cupping or an asymmetry of >0.2 between the two cups along with other signs of glaucomatous optic disc.

(ac) However, suspicious discs will have to be further investigated by the specialist as deemed appropriate.

Ocular Mobility and Motility

48(m)(xi) **Nystagmus**

(aa) **FIT** – Cases of physiologic nystagmus.

(ab) **UNFIT** – All other cases of nystagmus.

48(m)(xii) **Squint**

FIT

(aa) Small horizontal latent squint/ phoria i.e., Exophoria/ Esophoria along with Grade III BSV

UNFIT

(ab) All other cases of squint.

(ac) Hyperphoria/ Hypophoria or Cyclophoria.

48(m)(xiii) **Objective Convergence.** It should be less than or equal to 10 cm. If convergence insufficiency found, convergence test to be done as laid down:

(aa) Convergence Test. One of the two eyes is to be patched for 30 min and the RAF rule test is to be done after 30 min of patching. If after patching, the individual has convergence more than 10 cm, the candidate will be considered **UNFIT.**

(ab) The above procedure is to be done during the appeal medical board and need not be done during initial Medical Examination.

48(m)(xiv) **Accommodation.** It should be less than or equal to 12 cm for young individuals (less than 40 yrs of age at time of entry).

48(m)(xv) **Binocular Single Vision (BSV).** It should be good grade-III.

48(m) (xvi) **Visual Fields.** To be tested by the confrontation method. Only in suspicious cases to be tested on an Automated Field Analyser and in addition, Intraocular Pressure measurement (by GAT), RNFL thickness and other appropriate tests as required, to be done.

SECTION – 5

MEDICAL EXAMINATION OF WOMEN CANDIDATES

49. MEDICAL EXAMINATION OF WOMEN CANDIDATES

49(a) General methods and principles of medical examination of women candidates will be the same as for male candidates. However, special points pertaining to Medical Examination of women candidates are given in succeeding paragraphs.

49(b) A detailed menstrual and Gynecological history in the form of a questionnaire is to be obtained from the candidate.

49(c) A detailed physical and systemic examination will be carried out of the candidate, and she should be examined preferably by a Lady Medical Officer or a Lady Gynecologist.

49(d) The examination must include the following inspections: -

(i) External genitalia.

(ii) Hernial orifices and the perineum.

(iii) Any evidence of stress urinary incontinence or uterine prolapse outside introitus.

49(e) All married candidates will be subjected to speculum examination for any prolapse or growth on cervix or vagina. In all unmarried women candidates, speculum or per vaginal examination will not be carried out.

49(f) Ultrasound scan of the abdomen and pelvis is mandatory in all women candidates during the initial Medical Examination.

49(g) Any abnormality of external genitalia will be considered on merits of each case. Significant hirsutism with score equal to or more than 8 by Ferriman-Gallaway score especially with male pattern of hair growth along with radiological evidence of PCOS, will be a cause for rejection.

49(h) Following conditions will entail women candidates being declared unfit:

(i) Primary or unexplained secondary amenorrhoea

(ii) Severe Menorrhagia lasting for more than 7 days.

(iii) Severe dysmenorrhea necessitating absence from work / study.

(iv) Stress urinary incontinence

(v) Congenital elongation of cervix or prolapse which comes outside the introitus even after corrective surgery.

(vi) Pregnancy will be a cause of rejection.

(vii) The lady candidate will be considered fit 24 weeks after an uncomplicated vaginal delivery.

(viii) The lady candidate will be considered fit 12 weeks after an MTP/abortion.

(ix) The lady candidate will be considered fit. 52 weeks following a Caesarean Section.

(x) Complex ovarian cyst of any size except hemorrhagic corpus luteum cyst of 3 cm or less.

(xi) Simple ovarian cyst more than 6 cm.

(xii) Endometriosis and Adenomyosis.

(xiii) Submucous fibroid of any size.

(xiv) Broad ligament or cervical fibroid of any size causing pressure over the ureter.

(xiv) Fibroid uterus. Single fibroid uterus more than 30 mm in diameter, two fibroids (each fibroid more than 20mm in diameter or totalling more than 40mm in size), more than two fibroids in number or any fibroid causing distortion of endometrial cavity.

(xv) Congenital uterine anomalies except arcuate uterus.

(xvi) Acute or chronic pelvic infection evidenced by hydrosalpinx or adnexal mass.

(xvii) Disorders of sexual differentiation or transgender.

49(k) Following conditions will be declared as FIT: -

(i) Unilocular clear ovarian cyst up to six cm.

(ii) Minimal fluid in pouch of Douglas.

49(l) **Medical fitness after laparoscopic surgery or laparotomy**.

(i) Candidates reporting after undergoing laparoscopic cystectomy or myomectomy can be assessed for fitness 12 weeks after surgery if the wound has healed well and she is asymptomatic, ultrasound pelvis is normal, histopathology of tissues removed is benign and per operative findings are not suggestive of endometriosis.

(ii) Candidates who have undergone surgery for malignancy will be declared unfit.

(iii) Candidates will be considered FIT following laparotomy after 24 weeks from the date of surgery.

SECTION – 6

DENTAL FITNESS STANDARDS

50. General instructions for Dental Officers

Examination protocol:-

Examination should be done in a well lit room as per the sequence elucidated in the succeeding paras. The following instruments are advised to be used for intra oral examination:-

(a) Intra oral mouth mirror with handle.

(b) Dental explorer.

(c) A good quality hand torch.

General Notes:-

(a) Anterior teeth: Incisors and canines

(b) Posterior teeth: Pre molars and molars

(c) Upper (Maxillary) arch will be the index arch for award of dental points.

(d) All anterior teeth will be given one point each, if these teeth are fully erupted and in functional apposition with their counterparts in the opposite arch. Functional apposition means that the relation of the opposing teeth must allow masticatory function for that set of teeth i.e. cutting and shearing for anterior teeth and grinding for posterior teeth.

(e) Premolar teeth will be given one point each, if these teeth are in functional apposition with their counterparts in the opposite arch.

(f) Each of the molar teeth i.e. 1st, 2nd & 3rd Molars will be awarded 02 points each– if corresponding opposite teeth are present and in functional apposition with their counterparts in the opposite arch.

(g) If all 16 teeth are present in upper jaw & good functional apposition to corresponding teeth in lower jaw, the candidate will be awarded 22 points.

51. Award of dental points

Maximum points: 22 (All teeth erupted & in functional apposition with opposing arch).

Total of minimum points: 14 points for dental fitness -- Provided following teeth are present in upper jaw in good functional apposition to corresponding teeth in lower jaw:

Conditions: - (a) Any 4 of the 6 anterior teeth.

(b) Any 6 of the 10 posterior teeth.

52. Examination

(a) Gross facial examination: Candidate must be seated upright in a chair. Any gross asymmetry, soft or hard tissue defects/scars must be noted. If present, relevant history must be elicited. Congenital malformations must be clearly identified and any progressive co-morbidity is to be noted. Candidates with incipient pathological conditions of the jaws, which are known to be progressive or recurrent, will be rejected. Significant jaw discrepancies between upper and lower jaw which may hamper efficient mastication and/or speech will be a cause for rejection.

(b) Functional examination: Candidates will be asked to open the mouth fully. TMJs will be bilaterally palpated for tenderness and/or clicking. Candidates with symptomatic clicking and tenderness will be rejected. A mouth opening of less than 30 mm measured at the incisal edges will be reason for rejection. Dislocation of the TMJ on wide opening will be a cause for rejection.

(c) Intra oral examination:

(i) Removable prostheses/appliances: All removable dental prostheses/ appliances will be removed at the time of dental examination. No points will be awarded for any removable prostheses/appliances.

(ii) Soft tissues: Soft tissues of cheek, lips, palate, tongue and sublingual region must be examined for any swelling, discoloration, white patches, sub mucous fibrosis, ulcers, scars etc. All potentially cancerous conditions will be cause for rejection. Clinical diagnosis for sub mucous fibrosis with or without restriction of mouth opening will be a cause of rejection. Individual with any hard or soft tissue lesion will be declared unfit.

(iii) Teeth: All teeth should be examined for dental decay with a sharp dental explorer and mouth mirror.

(iv) Periodontal examination: All teeth will be checked for firmness. Gums will be examined for colour (pink) and plaque. Calculus deposits on teeth will be checked with mouth mirror.

(aa) Periodontal health of the teeth included for counting dental points should be satisfactory. Clinical parameters such as colour, contour, consistency, texture etc should be examined.

(ab) Individual teeth with localized periodontitis will not be awarded dental points.

(ac) Candidates with severe periodontal disease will be declared unfit. If periodontal disease is not severe and the teeth are otherwise sound, the candidate may be accepted if in the opinion of the Dental Offr, he/she can be cured by simple periodontal therapy excluding extraction.

(ad) Occlusion: Teeth will be examined for their functional apposition by asking the candidate to close the mouth in habitual occlusion. Functional apposition will be noted for all the teeth. Anterior open bite is to be taken as lack of functional apposition of involved teeth. Teeth in open bite will not be awarded dental points. Edge to edge bite is to be counted as functional apposition and awarded dental points. Teeth in cross bite but still in functional occlusion will be awarded points. Candidates having an open bite or reverse overjet will be declared unfit.

53. Special situations

(a) Dental caries. Carious teeth with broken down crowns, pulp exposure, residual root stumps, teeth with contiguous abscesses and sinuses will not be counted for award of dental points.

(b) Morphological defects. Teeth with developmental defects or any pathological condition of teeth which compromise efficient mastication will not be awarded any points. Teeth with gross structural defects will not be awarded dental points.

(c) Restorations. The examining officer will make a judgment about the soundness of the restorations and award points accordingly. Teeth restored by use of inappropriate materials will not be counted for award of dental points. Teeth with temporary restorations will not be awarded dental points.

(d) For Implants/ Implant supported Prostheses, no points will be awarded.

(e) Crowns made of metal or porcelain or metal-ceramic will be awarded points if, in the opinion of the Dental Officer, they are made on sound teeth.

(f) Fixed Partial Dentures (FPD)/ Implant supported FPD: FPD's will be assessed clinically & radiographically for firmness, functional apposition to opposing teeth & periodontal health of abutments. If parameters are satisfactory, points will be awarded for natural tooth (abutments) only.

(i) Bridges of more than 3 units: Only abutments will be awarded points, if healthy.

(ii) Acrylic crowns and bridges will not be awarded any points.

(g) Artificial removable dentures. Candidates will not get any points for dentures; only natural teeth will be counted for award of dental points in denture wearers.

(h) Oral hygiene. Poor oral health status in the form of gross visible calculus, periodontal pockets and/or bleeding from gums will render candidate UNFIT.

(j) Loose teeth. Teeth with clinically demonstrable mobility will not be awarded dental points. Periodontally splinted teeth will not be counted for award of dental points. More than two mobile teeth will render the candidate UNFIT.

(k) Points will not be awarded for retained deciduous teeth.

(l) Candidates reporting post maxillofacial surgery/maxillofacial trauma. Candidates who undergo cosmetic or post-traumatic maxillofacial surgery/trauma will be UNFIT for at least 24 weeks from the date of surgery/ injury whichever is later. After this period, if there is no residual deformity or functional deficit, they will be assessed as per criteria laid down.

(m) Fixed orthodontic lingual retainers will not be considered as periodontal splints and teeth included in these retainers will be awarded points for dental fitness.

(n) Any teeth included in a poorly fabricated dental prosthesis will not be awarded dental points.

(p) Malocclusion. Any malocclusion of teeth like crossbite, open bite,

excessive overjet, open bite, reverse overjet will be assessed with respect to masticatory efficiency and performance of duties. If malocclusion of teeth is, in the opinion of the dental officer, not hampering efficient mastication, maintenance of oral hygiene or general nutrition or performance of duties efficiently, then candidate will be declared FIT. Otherwise, reasons for rejection for malocclusion will be specified.

(q) Traumatic bite. Anterior teeth involved in a deep impinging bite which is causing traumatic indentations on the palate will not be counted for award of points and render the candidate unfit.

(r) Candidates wearing active fixed or removable orthodontic appliances will be declared UNFIT.

GUIDELINES FOR MEDICAL EXAMINATION OF MEDICAL/ NURSING CADETS AND CIVILIAN POST GRADUATE RESIDENTS UNDERGOING COURSES AT AFMS INSTITUTIONS

54. The medical/ nursing cadets and Priority V Civilian Post Graduate Residents after joining AFMS institutions for various courses will be medically examined at periodic intervals. The procedures and guidelines to be followed during the entire period of training are given in subsequent paragraphs.

55. Medical examination during training at AFMS institutions

(a) **Annual Medical Examination.** The Annual Medical Examination (AME) will be held every year. The AME will be conducted at the MI Room of the institution on AFMSF- 3B. The findings will also be endorsed in the Health Records Cards.

(b) The following lab investigations will be done during AME:

(i) Blood – Hemoglobin, TLC, DLC

(ii) Urine RE/ME, Specific Gravity

(c) The following endorsements will be made in Health Record Card during AME:

(i) Height

(ii) Weight

(iii) Pulse and Blood Pressure

(iv) Chest Examination

(v) Abdomen Examination

(vi) Visual Acuity

(vii) Dental Examination

(viii) Menstrual History (if applicable)

(ix) Blood Hemoglobin%

(x) Urine Routine examination

(xi) Vaccination Status

(d) The final endorsement will be as medically fit or unfit. **SHAPE coding will not be used.**

(e) For the final year batch, the last AME to be undertaken three months prior to the university examinations and will be endorsed as Pre-Commissioning Medical Examination. **The investigations to be undertaken will be the same as for the normal AME and conducted on AFMSF-3B.**

56. Found unfit during AME or suffering from illness/ injury.

(a) Individuals found unfit during AME or consequent to any illness or injury will be brought before a duly constituted medical board. The medical board will declare the individual as Temporary/Permanent unfit.

(b) Those accorded temporary unfitness will be monitored closely, given required restrictions in activities and will be reviewed every 12 weeks (or more frequently if required) by the specialist concerned.

(c) In all cases of injury an Injury Report (IAFY – 2006) will be initiated in triplicate by RMO/ treating specialist.

(d) Sick leave may be granted to the individual for a stipulated period as decided by the treating specialist.

(e) The maximum period of temporary unfitness including hospitalization and sick leave will be one year. Only in exceptional orthopedic conditions the Commanding officer of the institution may extend the above period by no more than six months. No trainee will be kept in temporary unfit status beyond 18 months.

(f) After the above period if the individual is still found to be unfit, he/she will be declared permanent unfit. The process of declaring the individual as permanent unfit may be initiated any time before the above stipulated period based on the recommendations of the medical board.

(g) The proceedings of the medical boards will be recorded on AFMSF-15. The Medical board proceedings will be approved by the Deputy Commandant or equivalent of the institution.

(h) Refusal of treatment will render the cadet/resident permanently unfit.

57. Appeal Medical Board (AMB)

(a) The individual may appeal against the findings of the above Medical Board. An Appeal Medical Board will be constituted by the Commanding officer of the institution. The opinion shall be given by the senior most specialist. The specialist giving the opinion and the members of the medical board will not be the same as the previous medical board against which the appeal has been preferred.

(b) The approving authority for the Appeal Medical board will be the Commanding officer of the institution.

58. Disposal of overweight trainees

(a) An individual found overweight beyond the acceptable limits during the AME will be counseled to reduce weight to acceptable limits by diet control and participation in PT & Games.

(b) He/ she will be reviewed every 12 weeks. In case the indl remains overweight after 12+12 weeks (24 weeks) of observation period, he/she will be declared temporarily unfit by the medical board. The candidate can be observed in temporary unfit status for overweight for a maximum period of six months, following which he/she will be declared permanently Unfit if the weight still remains above the permissible acceptable limits.

(c) If the individual is again found to be overweight after being once upgraded to medically fit status, he/ she will be directly declared permanently unfit by the medical board. No temporary unfit status will be granted for the second time.

59. Disposal if found unfit during the final phase of training or just prior to commissioning.

(a) In the event the Medical Board endorses that the individual is likely to attain fitness for commissioning within a period of six months: -

(i) The individual will be declared temporarily unfit & would be reviewed by the medical board after an appropriate period but not extending beyond six months. The maximum period of temporary unfitness in such cases would be six months.

(ii) If found fit by the medical board he/ she will be declared medically fit for commissioning. If after six months, still found unfit, the individual will be declared permanently unfit.

(iii) The administrative issues with regard to the procedures and disposal of above individuals placed in temporary unfit status will be governed by the policy letters promulgated separately.

(b) In case the Medical Board endorses that the individual is unlikely to attain fit status within a period of six months, the candidate will be declared permanently unfit.

- END -