

Roll No.....

Master of Physiotherapy (First Semester)
Main Examination-2022
Model Paper

MPT- 102

Advance Physiotherapeutics-I
Time : Three Hours
Maximum Marks : 75

Note : Section A: All question are compulsory.
Section B: Attempt any two questions out of three, and
Section C: Attempt any two questions out of four

SEC A (03 marks for each)
(Word limit 50 words)

1.

- a) Principle of Kaltenborn
- b) NCV Recording
- c) Butler neural mobilization
- d) Articular neurology
- e) Barrier concepts
- f) Resting positions
- g) Indications of NCV
- h) Use of NCV in various conditions
- i) Indications of Cyriax

SEC B (04 marks for each part)
(Word limit 100 words for each part)

2.

- a) Define NCV
- b) Indications of NCV
- c) Physiology of NCV

3.

- a) Indications of Kaltenborn approach
- b) Contraindications of Kaltenborn approach
- c) Principles of Kaltenborn approach

4.

- a) Define Biofeedback
- b) Indications of Biofeedback
- c) Applications of Biofeedback in various disorders

SEC C (06 mark for each part)
(Word limit 250 to 500 words for each question)

5.

- a) Indications and contraindications of Mulligan approach
- b) Principles of Mulligan approach

6.

- a) Define pain and Physiology
- b) Pain pathway

7.

- a) Stage of periartthritis
- b) Contraindications of EMG

8.

- a) Cyriax indications
- b) Principles of cyriax approach

48.5/75

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MODEL PAPER : 1 ADVANCE PHYSIOTHERAPEUTICS - I

SEC A

1 a) Principles of Kaltenborn.

Some foundational principle of Kaltenborn are:

- Positioning of the jt in resting position.
- Proper knowledge of jt kinematics.
- Bone Rotations & Translation.
- Joint Roll gliding & Translatory Jt play.
 - Concave Convex Rule
 - convex → opposite
 - concave → same.

(2)

(b) NCV Recording.

NCV can determine nerve damage & destruction. Two electrodes are placed on the skin over the nerve.

One electrode stimulates the nv. & a very mild electrical impulse & other electrode records it.

The resulting electrical activity is recorded by another electrode.

(2)

(c) Butler Neural Mobilization

Butler Neural Mobilization is a neural mobilization tech. which is used in relation to determine pathologies of nerves. Various neurodynamic tests are included in Butler Neural Mobilization.

i) ULTT 1

i) ULTT-2

ii) ULTT-3

v) Slump test

Butler mobilization is performed by applying light pressure directly on a compressed nerve to move it through the ~~neural~~ sheath.

(2-5)

iv) Barrier concept

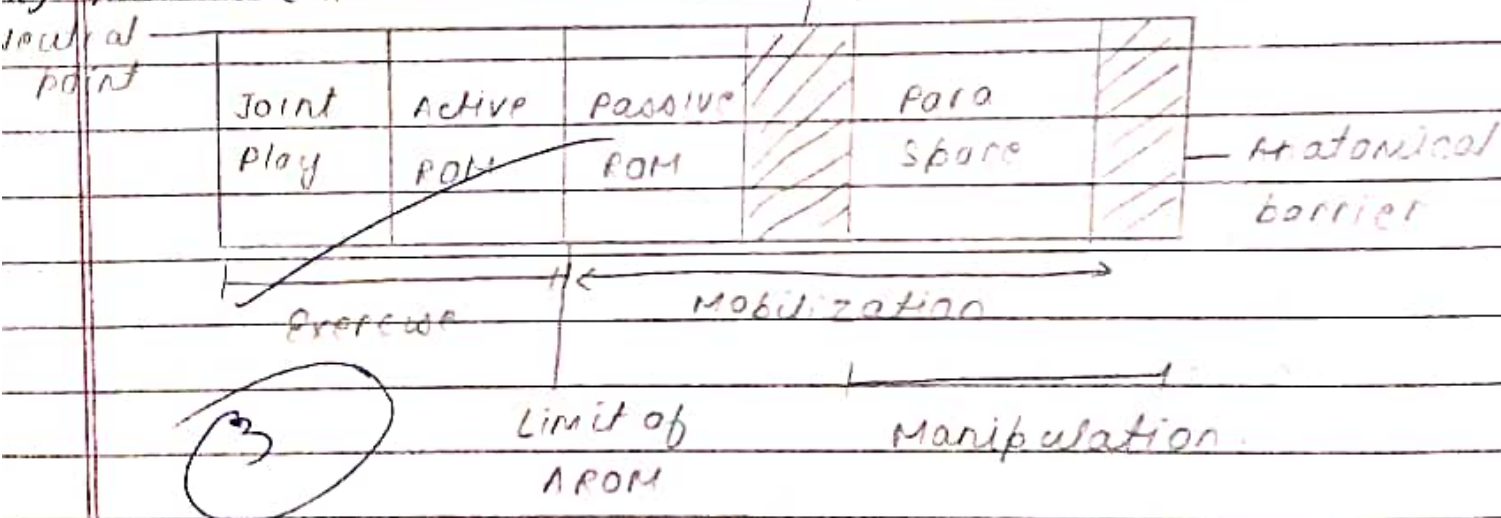
Barrier define the limit of motion.

Different types of barriers present in our body These are:

i) Neutral point

ii) Physiological barriers

iii) Anatomical barrier



(vi) Resting Position

Kalter born describe the loose pack position as resting position.

Loose pack position is defined as a joint position in such a way where its congruency is less & greater laxity in the capsuloligamentous complex of the jt.

Ex: Open Pack Position

To maintain normal range at the jt
To stretch the capsule of a jt
To stretch a muscle.

Traction

To reduce a bony subluxation.

Rupture of ligamentous adhesions.

(3)

SECTION B

Define NCV

A Nerve conduction velocity also called a nerve conduction study measures how ~~th~~ fast an electrical impulse moves through your nerve.

NCS involves direct stimulation to initiate an impulse in motor or sensory ~~sh~~erves or mixed nerves also. It's used to measure the speed of the electrical activity of a ns.

COMPONENTS OF NCS

The nv conduction study consists of the following:

Motor NCS

Sensory NCS

F-wave

H-reflex study

CNAP (Compound Nv APs)

In Motor NCS, Supramaximal stimulus generates a maximal response.

In ~~H~~ Sensory NCS, Submaximal stimulus is used to generate response.

ELECTRODE USED

- Q1 (Active) recording electrode : MA belly (over the motor end plate)
- Q2 (Inactive) recording electrode : Tendon
- Stimulating electrode : over the nv.
- Ground electrode : B/w stimulating & recording electrode.

(3.5)

(b) Indications of NCS

NCS is used to check nerve damage or destruction due to:

- axonopathy (damage to the long portion of nv. cell)
- conduction block (the impulse is blocked somewhere along the nv pathway)
- Demyelination (damage & loss of the fatty insulation surrounding the nerve cell)
- to differentiate b/w an injury to the nv. fiber & an injury to the myelin sheath.
- to diagnose a variety of muscular & neuromuscular conditions.
- differentiate b/w a nv disorder & a condition where a nv injury has affected the ms.

(3.5)

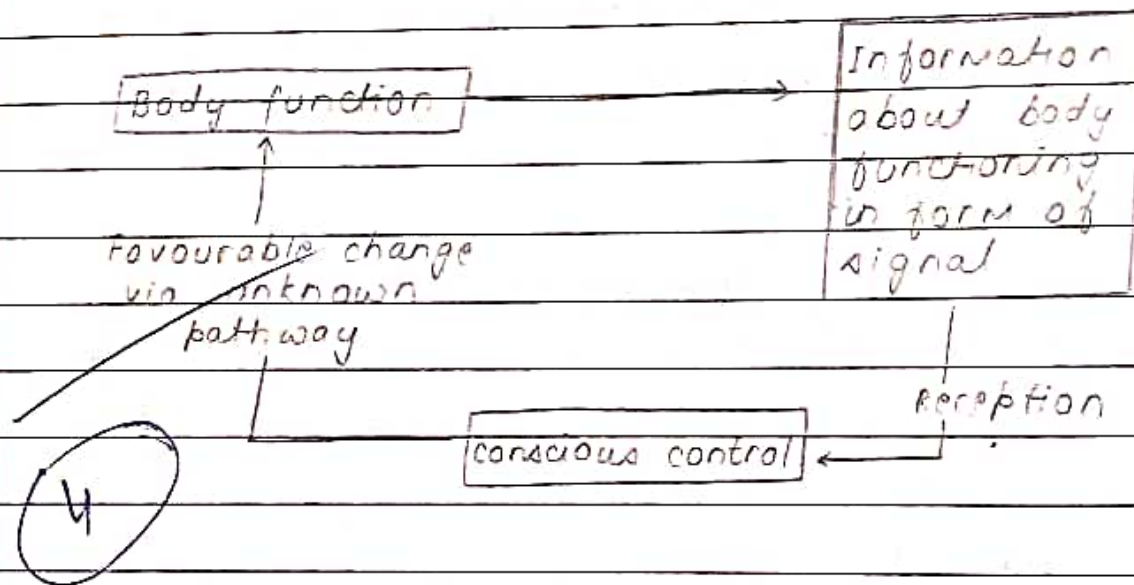
(c) Physiology of NCS

4 (a) Biofeedback

Biofeedback is a technique to reveal to human beings some of their internal physiological events, normal or abnormal, in the form of visual & auditory signals in order to teach

them to manipulate these otherwise involuntary or unfelt events by manipulating the displayed signals.

Biofeedback can be used to inform the pt about physiological events like BP, skin temperature, heart rate & other things like force & jt. displacement, so that by seeing these the pt. is able to control these activities, in order to understand biofeedback.



(b) Indication of Biofeedback

The use of biofeedback is classified for two broad criteria

- To improve the control over the defective ms. or defective nvt.
- For the control of stress related conditions.

Motor control

- T/t of hemiplegia is done by electromyography biofeedback.
- Reduce & control the spasticity in case of CP.
- dystonic conditions.

Spasmodic torticollis

Helps in recovery of peripheral nv injuries

Postural control

Foot drop due to stroke

Pain due to mv spasm

Bell's Palsy

Paralytic mv

LMN lesion

Parkinson's disease.

Stress Related conditions

Essential hypertension

Cardiac arrhythmias

Raynaud's disease

Migraine

Tension headache

Epilepsy

SECTION C

Q. 5) Indication & contraindications of Mulligan approach

For indication range of motion

To reduce pain

Osteo Arthritis

Adhesive capsulitis

Deficits range of motion of cervical region

Headache

Inc pain free ROM of spine & limbs also

Inc function

Joint stiffness

Contraindication

- Malignancy
- Unhealed wound
- Recent H
- Osteoporosis
- Pregnancy
- Dizziness
- Neurological signs

(3.5+)

(b) Principles of Mulligan Approach

Principle of Examination

Trial Intervention Approach

Within the Mulligan concept approach the following sequence is used to determine the impact of each procedure on the pt's condition.

- Examination
- Trial Intervention (Position that either provoke or inc. the pt's complaints).
- Re-examination

The pt's motion & symptomatic response to it. repositioning confirms or refutes the presence of a positional fault.

Principle of Intervention

The main principle behind the Mulligan concept is that once a passive glide or mobilization to the jt is pain free the physiotherapist can progress the T/t.

The specific trial procedure that was proven to be effective in altering symptoms & enhancing motion during the examination, becomes the

- The therapist must continuously monitor the pt reaction to ensure no pain is recreated. While sustaining the accessory the pt is requested to perform comparable sign if PT comparable sign was failure to improve it would indicate that the PT has not found correct T/T plane, grade of mobilization etc.

4 (a) STAGE OF PERIARTHRITIS

Three main stages of PA shoulder

1. Acute / Freezing / Painful Phase

Gradual onset of shoulder pain at rest & sharp pain at extremes of motion. 2 pain at night & sleep interruption which may last anywhere upto 3 months.

2. Adhesive / Frozen / Stiffening Phase

Pain starts to subside. progress loss of CM motion in capsular pattern. 4 pain at Pain is apparently only at extremes of any MVT. This phase lasts upto

3. Thawing Phase

Spontaneous, progressive improvement in functional ROM which can last anywhere from 5 to 24 months. It is also called Resolution Phase.

(b) Contraindications of ENG.