**IQRA NATIONAL UNIVERSITY**

**DEPARTMENT OF ALLIED HEALTH SCIENCES**

**Final-Term Examination (Spring-20) (DPT 6TH)**

**Course Title: Physical Agents and Electrotherapy-ll Instructor: Ms. Maria Feroze**

**Time: 6 hours Max Marks: 50**

**Note:**

* **This paper has two sections, sec A and sec B. Attempt both sections.**

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**I'd #6999**

**SECTION-A: MULTIPLE CHOICE QUESTIONS (MCQs)**

1. Romans used baths for:
   1. Immersion
   2. **Hygiene**
   3. Pleasure
   4. None of the above
2. The goal of hydrotherapy is to improve the circulation and quality of blood, for getting this goal one needs?
   1. **Proper circulation**
   2. Cold water
   3. Hot water
   4. **Food on time**
3. Regarding the physical properties of water moving water can transfer heat by\_\_\_\_\_\_\_\_\_\_\_\_
4. Water cannot transfer heat
5. Conduction
6. **Convection**
7. Radiation
8. The thermal conductivity of water is approximately \_\_\_\_\_\_\_\_\_\_\_\_that of air
9. 4 times
10. 16 times
11. 2.5 times
12. **25 times**
13. \_\_\_\_\_\_\_\_\_\_\_ is the upward force generated by the volume of water being displaced.
14. Resistance
15. Hydrotherapy
16. **Buoyancy**
17. Torque
18. Kevin, a 34 years old football player, comes to your clinic with an acute sprain injury. Your clinical supervisor tells you to control the swelling and pain with ice, on the basis of the evidence (studies) you have what will be the right application of ice?
19. **Single 20-minute**
20. Two repetitions of 10 minutes off and 10 minutes on
21. Four repetitions
22. I will refer this patient to medical doctor
23. Infrared rays are electromagnetic waves with wavelengths of?
24. 75 nm- 4000 nm
25. 7.5 nm- 4000 nm
26. **750 nm- 400000 nm**
27. 600 nm- 400000 nm
28. Non- luminous generator provide \_\_\_\_\_\_\_\_\_\_
29. **Infra-red rays**
30. UV rays
31. Visible light
32. All of the above
33. If you need both infra-red and UV rays the best option to use is?
34. **Luminous generator**
35. Non- luminous generator
36. **Both can be used**
37. Direct current
38. Specific gravity of a person increases when?
39. Bone mass is decreased
40. Muscle mass is decreased
41. Increase in adipose tissue
42. **None of the above**
43. The distance of Infra-red lamp from the patient should be measured. It is usually\_\_\_\_\_\_\_\_\_\_\_ according to the output of the generator.
44. 5-17 cm
45. 50-555 cm
46. 5.0-7.5 cm
47. **50-75 cm**
48. The human body has a specific gravity of\_\_\_\_\_\_\_\_\_\_\_\_\_\_
49. 8 – 0.9
50. 00.80 – 00.90
51. **0.87 – 0.97**
52. 0.40 – 0.90
53. Regarding the duration of infrared treatment for acute inflammation or recent injuries and for the treatment of wounds, an exposure of \_\_\_\_\_\_\_\_\_\_\_\_\_is adequate.
54. 1-2 days
55. 1-2 weeks
56. 1-2 months
57. **10-15 minutes**
58. All of the following are the therapeutic effect of local tissue heating Except?
59. Healing
60. Control of infection
61. Relief of pain
62. Both A and B
63. **None of them**
64. When a body part immersed in fluid is at rest, the fluid will exert equal pressure on all surface areas at a given depth. This is \_\_\_\_\_\_\_
65. Buoyancy
66. Archimede’s Principle
67. **Pascal’s law**
68. Force law
69. Any condition in which increased metabolic rate, cell activity and local blood flow are beneficial could be appropriately treated by\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
70. Cold water
71. Ice
72. Mild heating
73. Increased heating
74. The stimulation of sensory heat receptors may activate the\_\_\_\_\_\_\_\_\_\_\_ for the relief of pain.
75. Muscles contractures
76. Ligands gate mechanism
77. Primitive reflexes
78. **Pain gate mechanism**
79. \_\_\_\_\_\_\_\_\_\_is a water bath in which the water is agitated by the electric turbine
80. Hubbard tank
81. Heating tank
82. **Whirlpool**
83. Hot bath
84. Both B and C
85. Fungal infections which are difficult to control are sometimes treated with regular heat; what seems to be the effective factors of heating?
86. Thorough drying of the skin surface
87. Local vasodilatation
88. **Systemic vasoconstriction**
89. Both A and B
90. Regarding shortwave, the electrodes are placed on the same side of the part to treat more superficial structure. This is called \_\_\_\_\_\_\_\_
91. Contra-planar
92. **Coplanar**
93. Cross-fire
94. Longitudinal
95. Viscosity is temperature dependent so raising the temperature in liquids will?
96. **Increase fluid movement**
97. Decrease fluid movement
98. Increase viscosity
99. Both A and C
100. Ultra-violet lies between \_\_\_\_\_\_\_\_\_\_\_\_\_\_and X-ray in the electromagnetic spectrum
101. **Visible light**
102. Infra-red
103. Microwave
104. Ultraviolet
105. Shortwave goes deep, its penetration is up to?
106. 4cm
107. **5cm**
108. 6cm
109. 8cm
110. A physical therapist assistant is discussing a topic with the students of DPT, giving the instructions that it may penetrate as far as the capillary loops in the dermis, what he is talking about?
111. UV-C
112. UV-B
113. **UV-A**
114. UV-D
115. Which of the following is not included in diathermy family?
116. Microwave
117. Ultrasound
118. Shortwave
119. **Infrared**
120. Direct penetration of the HeNe laser at 1mW is said to be about approximately \_\_\_\_\_\_\_\_
121. 0.2mm
122. 0.5mm
123. **0.8mm**
124. 12mm
125. Being a physical therapist if you are using UV light for a condition, what will be the optimum course of treatment?
126. 4 weeks
127. 6 Weeks
128. 4 months
129. **Depends on the condition**
130. All of the following are the Indications for Spinal Traction Except?
131. Disk herniation
132. Muscle strain
133. **Osteoporosis**
134. Degenerative joint diseases
135. Process of drawing or pulling apart of a body segment is?
136. **Traction**
137. Spinal traction
138. Compression
139. Spinal compression
140. \_\_\_\_\_\_\_\_\_\_\_waves have been reported to penetrate as deep as 4-6 cm into the tissues
141. Infra-Red
142. Micro
143. Ultrasound
144. **None of them**
145. To treat an infected Ulcer with UV-radiations, which one will be the best treatment option?
146. UV-D
147. UV-A
148. **UV-B**
149. UV-C
150. As a physical therapist you have much more knowledge about skin receptors, the following will reflect it, which one is true statement regarding skin receptors?
151. Warm receptors are several times more numerous than cold receptors
152. **Cold receptors are several times more numerous than warm receptors**
153. Cold and warm receptors are equal in quantity
154. Cold receptors sometimes work as warm receptors
155. When cold is applied in an appropriate way on the skin, it increases the excitatory bias around the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
156. Posterior horn cell
157. **Anterior horn cell**
158. Lateral horn cell
159. Basically around the ganglion
160. Regarding treatment of jaundice in babies with UV light, how long will it take to correct jaundice?
161. **24-48 hours**
162. 24-72 hours
163. 24-48 hours
164. 72 hours only
165. In general use of UV light treatment, a target distance of skin from lamp is\_\_\_\_\_\_\_\_\_\_\_\_ assuming an angle of incidence of 90°.
166. 24-48 inches
167. 24-72 inches
168. 2-4 cm
169. **None of the above**
170. A patient presented to you after an hour of acute sprain injury; while your first goal is to decrease pain and swelling via cold therapy what will you use for the referenced therapy?
171. Ice
172. Cold water
173. Hot packs
174. **All of the above can be used**

**SECTION – B**

Q1. Briefly explain how hydrotherapy produces:

* 1. **Musculoskeletal effects**

Ans:- The buoyancy effect experienced within the water reduce the bone weight , muscles and joints have to bear; this coupled with the healing effect to decrease swelling , decrease pain and increase blood flow an ideal medium to assist in your return to full function.bouyancy will give a thrust force due to which patient will feel less load.the bouyancr property of water is much more helpful .

Also it's beneficial for obese patient because they have high load on their joints. So in water their will be low weight.

Water provide a supportive and unique environment in which rehabilitation of joints and muscles can be prove very effective.

The resistance of water is dependent on the speed at this the movement is performed.This is particularly good in injuries of musculoskeletal because it's minimaze the chance and the resistance will be high.

**MAIN AIM:-**

The main aim of the hydrotherapy is to treat of musculoskeletal injuries because is to speed up of the restoration of function .In order to achieve these goals many of other aim will also be worked these may include:-

Improve strength

Decrease pain

Increase confident

Im prove flexibility

**Musculoskeletal injuries may benefits for hydrotherapy:-**

Hydrotherapy is most to good for the treatment of a very large range of musculoskeletal condition a few names are here below:

Osteoarthritis

Rhomatoid arthritis

Ankle sprain

Hamstring strain

Lower back pain

**Physiological Effect:-**

Stretching

Decrease weight bearing

Slow bone density lose.

* 1. Cardiovascular effects

Ans:-Hydrotherapy which can be used to enhance cardopulmonary to endurance in patient with a history of chronic cardiovascular condition.

**Cardiovascular condition may benefits for from hydrotherapy:-**

**Cardiovascular** would be benfits for their inclusion of hydrotherapy within the rehabilitation program.cardiovascular condition haydro therapy may include:-

Heart faliure

Angina

Myocardial infarction

Lung surgery.

**Aim of hydrotherapy:-**

Hydrotherapy is used as the part of cardic rehabilitation. Hydrotherapy provide a unique environment in which people with medical condition will be able to do exercises and reduce the pain.

Decrease shortness of breath

Decrease pain

Improve function

Improve exercise tolerance

Increase quality of life

Cardiovascular condition may be improve to using hydrotherapy.the buoyancy of water allowed for less intense cardiovascular exercises.

**Physiological Effect:-**

Increased cardiac output

Increased venous circulation

Decrease heart rate.

* 1. Respiratory effects:-

Ans:- if we immersed whole body in water than breathing will be greather because breathing goes peripherally to the heart. There will be pressure on chest due to whole body immeresed in water and also they high circulation in chest cavity.lungs will not expend as normal and will show resistance toward lungs extension . because the pressure will be exerted due to water.due to this the lungs capacity is low so therefore lungs will work more to improve breathing.

If patient have sever lungs problem so hydrotherapy will given for a short period of time.

**Physiological Effect:-**

Increase work load

Decrease vital capacity

Decrease exercises include asthma