

Postmortem

Questions

72. **Elevated levels of cyanide is seen in death due to which of the following (AIIMS 2000)**
- a. Cold
 - b. Scald
 - c. Starvation
 - d. Thermal burns
73. **One of the following is true of antemortem abrasion (AP 92)**
- a. Bright red in colour
 - b. Exudation of serum is more
 - c. Intravital reaction is seen
 - d. All of the above
74. **Suspended animation occurs after (AI 99)**
- a. Electrocutation
 - b. Cyanide poisoning
 - b. Burns
 - d. Drowning
75. **What is suspended animation (PGI 97)**
- a. The animal is suspended in air
 - b. Hibernation
 - c. The subject is alive but shows no signs of life
 - d. Deep sleep
76. **Antemortem blister differs from postmortem blister by (PGI 96)**
- a. Presence of Albumin & Chloride in blister fluid
 - b. Gas in blister
 - c. Dry hard surface of the floor of blister
 - d. Absence of hyperemia around the blister
77. **More than 5% carboxyhaemoglobin is indicative of (PGI 89)**
- a. Ante mortem burns
 - b. Drowning
 - c. HCN poisoning
 - d. Suffocation

- 78. In a completely charred body at autopsy medical officers can say that the burns are ante-mortem if he can find (JIPMER 90)**
- Soot in respiratory passages
 - Cyanosis of finger nails
 - Congestion of kidney
 - Pale internal organs
- 79. Which of the following sign will indicate that menstrual blood was antemortem (DELHI 93)**
- Alkaline
 - Doesn't clot unless mixed with semen
 - Light pink
 - Shows endometrial & vaginal cells
- 80. Rate of cooling helps in determining (JIPMER 98)**
- Time of death
 - Manner of death
 - Place of death
 - Cause of death
- 81. The rate of cooling down of dead bodies in tropical climate is (PGI 88)**
- 0.2° C / hr
 - 0.5° C / hr
 - 1° C / hr
 - 1.5° C / hr
- 82. Blood clots after__ of death (DNB 88)**
- 1/2 hr
 - 45 min
 - 1/4hr
 - 1 1/2 hrs
- 83. Which of the following sign will indicate that the death was ante-mortem (TN 93)**
- Cutis anserina
 - Washerwoman's skin
 - Weed & grass in hands
 - Cyanosis
- 84. Which of the following is not a feature of brain death (AI 2002)**
- Complete apnea
 - Absent pupillary reflex
 - Absent deep tendon reflex
 - Heart rate unresponsive to atropine

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- 85. One of the following is a definite sign of death due to drowning (KAR 95)**
- Sand and mud in the nose and nostrils
 - Fine lathery froth in mouth and nostrils
 - Washerwoman's hand and feet
 - Diatoms in bone marrow
- 86. Cadaveric spasm (PGI 87)**
- Instant in onset
 - Confined to small group of muscles
 - Occurs only in voluntary muscles
 - Indicates that the person was alive at that time
 - All of the above
- 87. Number of hours since death is calculated by multiplying the fall in rectal temperature with (DELHI 93)**
- 0.33
 - 0.67
 - 1.0
 - 1.33
- 88. Immediate rigidity of a group of muscle without passing into stage of primary relaxation (AI 97)**
- Cadaveric spasm
 - Cadaveric rigidity
 - Both
 - None
- 89. Rigor mortis is simulated by (AIIMS 92)**
- Cadaveric spasm
 - Mummification
 - Algor mortis
 - All of the above
- 90. Post mortem wound best differs from the antemortem wound by (DELHI 93)**
- Gaps on incising
 - No clots
 - Absence of erythema and cellular changes
 - Removable stain
- 91. Immediate stiffness post mortem occurs in (AI 90)**
- Cadaveric rigidity
 - Cadaveric spasm
 - Rigor mortis
 - Algor mortis

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- 92. Which of the following is true regarding cadaveric spasm (AP 96)**
- a. No primary relaxation
 - b. No secondary relaxation
 - c. No primary or secondary relaxation
 - d. No change
- 93. Changes in retinal vessels soon after death include (AP 91)**
- a. Fragmentation of Blood column
 - b. Haemorrhage into vitreous
 - c. Collapse of vessels
 - d. None of the above
- 94. Hypostasis lasts for (PGI 88)**
- a. Hours
 - b. Days
 - c. Weeks
 - d. Months
- 95. If a body is left undisturbed for how long does post-mortem staining persists (PGI 87)**
- a. Few hours
 - b. Few days
 - c. Few months
 - d. Persists till it demerges with discolouration of putrefaction
- 96. Post mortem staining of lower parts of hands and feet indicates (AP 96)**
- a. Prolonged suspension after death
 - b. Antemortem hanging
 - c. Death due to asphyxia
 - d. Drowning
- 97. Post mortem cherry red discolouration is due to (AP 98)**
- a. Asphyxia
 - b. Carbon monoxide
 - c. Drowning
 - d. OPC poisoning
- 98. Post mortem calorificity is seen with (AI 97)**
- a. Strychnine poisoning
 - b. Lead poisoning
 - c. Mercury poisoning
 - d. Phosphorus poisoning

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99. Reddish brown colour in Post mortem lividity (AIIMS 99)

- a. CO poisoning
- b. Cyanide poisoning
- c. Phosphorus poisoning
- d. Aniline poisoning

100. Rigor mortis develops__ after death (UPSC 87)

- a. 1/2 - 1 hr
- b. 1-2 hours
- c. 3-6 hours
- d. 6- 8 hours

101. Post mortem staining gets fixed after (PGI 84)

- a. 2-3 hours
- b. 3-4 hours
- c. 5-6 hours
- d. 6-7 hours

102. Post mortem staining can occur in some cases before death in (AIIMS 84)

- a. Children
- b. Old persons
- c. Cholera
- d. All of the above

103. The temperature of the body rises up for the first two hours after death. The probable condition include following except (DNB 89)

- a. Sun stroke
- b. Frost bite
- c. Septicemia
- d. Tetanus
- e. Strychnine poisoning

104. Rigor mortis first starts in (AIIMS 82)

- a. Upper eyelids
- b. Lower eyelids
- c. Lower limbs
- d. Fingers

105. Rigor mortis is simulated by (AIIMS 92)

- a. Cadaveric spasm
- b. Mummification
- c. Algor mortis
- d. All of the above

- 106. What disappears first in Post mortem rigidity (AIIMS 95)**
- Eyelids
 - Neck
 - Lower limbs
 - Upper limbs
- 107. In rigor mortis muscle (KERALA 94)**
- Stiffens
 - Shortens
 - Stiffens and shortens
 - Stiffens and lengthens
- 108. Which of the following is not correct regarding diatoms (AI 2005)**
- Diatoms are aquatic unicellular plant
 - Diatoms has an extracellular coat composed of magnesium
 - Acid digestion technique is used to extract diatoms
 - Presence of diatoms in the Bone marrow is an indication of antemortem inhalation of water
- 109. Post mortem lividity is unlikely to develop in a case of (AI 2003)**
- Drowning in well
 - Drowning in fast flowing river
 - Postmortem submersion
 - Drowning in swimming pool
- 110. Paltauf's haemorrhage may be seen in (AI 99)**
- Hanging
 - Drowning
 - Strangulation
 - Carbon monoxide poisoning
- 111. Correct order of putrefaction (AI 05)**
- Brain, Heart, Uterus
 - Brain, Uterus, Heart
 - Uterus, Heart, Brain
 - Brain, Uterus, Heart
- 112. Which organ putrefies last in females (AI 94)**
- Prostate
 - Uterus
 - Brain
 - Breast
- 113. In a decomposed body the first sign seen is (AI97, AP 94, TN 91)**
- Greenish discolouration over skin of right iliac fossa
 - Greenish discolouration over skin over left iliac fossa
 - Purplish black discolouration on face
 - Purplish black discolouration over lower extremities

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114. **Aseptic autolysis is found in (AIIMS 98)**
- Adipocere
 - Putrefaction
 - Mummification
 - Maceration
115. **Which one of the tissues putrefies late (AIIMS 2003)**
- Brain
 - Prostate
 - Liver
 - Stomach
116. **Putrefaction starts in (PGI 87)**
- Liver
 - Brain
 - Lung
 - Heart
117. **Putrefaction is delayed in poisoning due to (AI 2000)**
- Carbolic Acid
 - OP - Organophosphorus
 - Lead
 - Nux - Vomica
118. **Mummification is due to (AI 95)**
- Putrefaction
 - Desiccation
 - Saponification
 - Necrosis
119. **Presence of maggots at post-mortem indicates (JIPMER 91)**
- Duration since death
 - Cause of death
 - Mode of Death
 - Posture of body at death
120. **Maggots are seen on the dead body after (PGI 96)**
- One day
 - 2 to 3 days
 - 3-4 days
 - One week
121. **Maggots appear in body in rainy season within (PGI 97)**
- 24 hr
 - 1-2 days
 - 2-3 days
 - 3-4 days

122. Mummification occurs when (PGI 87)

- a. High atmospheric temperature is present
- b. Dry Air condition
- c. Wind is present
- d. All

123. True statement about adipocere (AP 91)

- a. It is due to dehydration of the subcutaneous tissue
- b. It is due to hydrogenation of subcutaneous fat
- c. It is formed in the epidermal tissues
- d. It is retarded by heat and accelerated by cold

124. Foamy liver is seen in (AIIMS 87)

- a. Putrefaction
- b. Drowning
- c. Mummification
- d. Adipocere

125. Honey combing is seen in liver in cases of (KERALA 91)

- a. Cirrhosis
- b. Rupture
- c. Putrefaction
- d. Hydatid disease

126. Postmortem in a newborn baby is done by opening first (AP 91)

- a. The skull
- b. The chest cavity
- c. The abdominal cavity
- d. As per convenience

127. Cardiac Polyp is a term used for Postmortem (AIIMS 81)

- a. Fibrinous clots in heart
- b. Aneurysm
- c. Infarcts in heart
- d. Pale patches in heart

128. In burnt bones, the following can be detected (AIIMS 81)

- a. Arsenic
- b. Lead
- c. OPC
- d. None

129. Entire absence of fat throughout the body in post mortem is suggestive of (PGI 90)

- a. Starvation
- b. Tuberculosis
- c. Diabetes
- d. All of the above

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130. In starvation, the post mortem appearance of gall bladder is (KERALA 87)

- a. Atrophied
- b. Distended
- c. Show stones
- d. Normal

131. The hydrostatic test need not be performed in case of (AIIMS 84)

- a. Infanticide
- b. Spongy or crepitant
- c. Lungs or Liver like in consistency
- d. None

132. Spinal cord is opened from (AIIMS 86)

- a. Frontal approach
- b. Back side
- c. Lateral side
- d. None

133. The postmortem finding seen in smothering includes (AP 97)

- a. Bruising in inner aspect of upper lip
- b. Fracture body of hyoid
- c. Fracture of cricoid
- d. Curved marks on neck

134. Post-mortem autopsy is done in (JIPMER 98)

- a. Whole body
- b. Parts which are injured
- c. Parts under inquest
- d. Parts under consent from relatives

135. After post-mortem autopsy body is handed over to (JIPMER 98)

- a. The authority who had conducted inquest in that case
- b. Police Station near by
- c. Coroner
- d. Magistrate

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Answers

72. **(d) Thermal burns** (Ref: R - 285)
Poisonous gases like cyanide and oxides of nitrogen are produced due to burning of plastic and synthetic material. Burning of nitrogen containing substances, eg. Nitrocellulose film may liberate Nitrogen Oxide and Nitrogen tetroxide. Burning of wool or silk liberate ammonia, hydrogen cyanide, hydrogen sulphide and oxides of sulphur. All these gases contribute to death. Depending on materials burning in the fire, various levels of cyanide are found in the blood, but the levels are usually less than 0.3mg%. Cyanide can be produced in significant concentration by decomposition of the body.
73. **(a) Bright red in colour** (Ref: R - 154)
Some differences:
- | | <u>Ante mortem abrasions</u> | <u>Post mortem abrasions</u> |
|------------------------------------|------------------------------|--|
| Site | Anywhere on the body | Usually over bony prominences |
| Colour | Bright reddish brown | Yellowish, translucent, parchment like |
| Exudation | More scab, slightly raised | Less, scab often less slightly below the level of skin |
| Micros-Intravital reaction & copic | Congestion seen | No intravital reaction and no congestion |
74. **(a) Electrocution & (d) Drowning** (Ref: R - 129)
Suspended animation occurs in:
Electrocution Cholera
Drowning Deep shock
New born Barbiturates / opioids overdose
After anaesthesia Insanity
Cerebral concussion
Heat stroke
Mesmeric trance
75. **(b) Hibernation**
(c) The subject is alive but shows no signs of life (Ref: R - 129)
In this condition signs of life are not found, as the functions are interrupted for some time, or are reduced to minimum. However life continues and resuscitation is successful in such cases. The metabolic rate is so reduced that the requirement of individual cell for oxygen is satisfied through the use of oxygen dissolved in the body fluids. It is also called apparent death.

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76. **(a) Presence of Albumin & Chloride in blister fluid** (Ref: R - 288)
The antemortem blister shows no gas and hyperemia due to increased permeability of capillaries is prominent. Blisters are found mainly in scalds and heat burns.
77. **(a) Ante mortem burns** (Ref: R - 285)
In death due to burns, CO levels in the blood will be more than 10% and may reach 70 - 80% though children & old persons die at 30 - 40%. The level of CO saturation of the blood is dependent on concentration of CO in inhaled air, the duration of exposure, the rate and depth of respiration, the haemoglobin content of blood and activity of the victim. CO may absent in blood due to various reasons such as rapid death, convection air currents, low production of CO, flash fire, inhalation of superheated air.
78. **(a) Soot in respiratory passages** (Ref: R - 285)
The presence of carbon particles in the terminal bronchioles on histological examination is absolute proof of life during fire. The soot is better seen by spreading a thin film of mucus on a clean sheet of white paper. Presence & amount of soot in air-passage depends on the type of fire, the amount of smoke produced and duration of survival in smoke contaminated atmosphere.
79. **(b) Doesn't clot unless mixed with semen** (Ref: Parikh 635)
80. **(a) Time of death** (Ref: R - 130)
Not a reliable method. A rough idea of approximate time in hours of death can be obtained by using the formula
Normal body temperature - Rectal temperature
Rate of temperature fall per hour.
It cannot be assumed that body temperature is normal at death. In cases of fat or air embolism, certain infections, septicemia, heat stroke, a sharp rise in temp occurs. Exercise or struggle prior to death may raise temp. Low temperature occurs in collapse, CCF, cholera, massive haemorrhage.
81. **(b) Roughly 0.5° - 0.7 °C** (Ref: R - 131)
Determination of temperature of the body is important only in cold and temperate climates. In tropical zones, the post mortem fall in temperature may be nominal. An accurate formula cannot be devised to define rate of heat loss.
82. **(a) 1/2 hour** (Ref: Parikh 618)
83. **(c) Weed & Grass in hands** (Ref: AN - 335)

- 84. (c) Absent Deep Tendon Reflex** (Ref: R - 115)
 The absence of deep tendon reflexes is not required because the spinal cord may be functional.
 Criteria for the diagnosis of brain death
- | | | |
|------------------------------------|---|--|
| i) Widespread cortical destruction | - | Deep Coma |
| | - | Unresponse to all forms of stimulation |
| ii) Global brain stem damage | - | Absent pupil reaction |
| | - | loss of dolls and corneal reflexes |
| iii) Lower brain stem destruction | - | Complete apnea |
- 85. (d) Diatoms in bone marrow** (Ref: R - 323)
 (a) and (c) can occur on submersion of body in cold water immediately after death, while the muscles are still warm and irritable. Froth is seen in death due to strangulation, acute pulmonary edema, electrical shock, during an epileptic fit, in opium poisoning and putrefaction. Only a live body with a circulation could transport diatoms from the lungs to the brain, bone marrow, liver and other organs.
- 86. (e) All of the above** (Ref: R - 323)
 Additional info - Predisposing factors are sudden death, excitement, fear, exhaustion, nervous tension, etc., Muscle stiffness is marked. Possibly due to failure of the chemical processes required for active muscle relaxation to occur during molecular death i.e ATP is depleted.
- 87. (b) 0.67** (Ref: AN - 149)
 In India the average rate of this fall varies between 0.5°C (in summer) to 0.7°C or more in cold places. There is however a "lag period" before post mortem cooling begins, because body temperature is maintained until that of the internal organs is dissipated by conduction and convection. This lag period (30 min to 2 hours) should be added to the time passed since death.
- 88. (a) Cadaveric spasm** (Ref: R - 135)
 After death the muscles of body pass through three stages (i) Primary relaxation or flaccidity (ii) Rigor mortis or cadaveric rigidity (iii) Secondary flaccidity. During stage 1, death is only somatic and it lasts for one to two hours. All the muscle of the body begin to relax soon after death. Muscles are relaxed as long as ATP content remains sufficiently high to permit splitting of actin - myosin cross-bridges.
- 89. (a) Cadaveric spasm** (Ref: R - 138)
 In Rigor mortis voluntary and involuntary muscles are involved. Usually cadaveric spasm restricted to a single group of voluntary

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muscles. In Rigor mortis, muscles do not respond to electrical stimuli while in cadaveric spasm muscles respond to electrical stimuli. Refer Q.14

90. **(c) Absence of erythema and cellular changes** (Ref: R - 159)
In antemortem bruising, there is swelling, damage to the epithelium, extravasation coagulation and infiltration of the tissues with blood and colour changes. These signs are absent in postmortem wounds. Contusions produced immediately before death show a marked decrease in the acidic mucopolysaccharides of the connective tissue ground substance, as demonstrated by Alcain blue or dialyzed iron technique. In post mortem wounds, margins are sharp and well defined.
91. **(b) Cadaveric spasm** (Ref: R - 138)
Time of onset for cadaveric spasm is instantaneous - For Rigor mortis it is one to two hours after death.
92. **(a) No primary relaxation**
Flaccidity following rigor mortis is caused by the action of alkaline liquids produced by putrefaction. Another view is that rigidity disappears due to solution of myosin by excess of acid produced during rigor mortis. A third view is that enzymes are developed in dead muscle which dissolve myosin by a process of auto digestion.
93. **(a) Fragmentation of Blood Column** (Ref: R - 130)
Fragmentation or segmentation (trucking or shunting) of the blood vessels (Kerkovian sign) in the retinal vessels appear within minutes after death, and persists for about an hour. This occurs all over the body due to loss of blood pressure but it can be only seen in retina by ophthalmoscope.
94. **(b) Days** (Ref: R - 133)
Fixation of post mortem staining usually occurs in 6 to 12 hours or more but the conditions of blood at the time of death exerts a considerable influence.

Hypostasis related to the time of death hpm (hours post mortem)

Stage	Lower Limit	Upper Limit
1.Beginning	0.25	3
2.Confluence	1	4
3.Maximum	3	16
4.Thumb Pressure	1	20
5.Complete shifting	2	6
6.Incomplete shifting	4	24

95. **(d) Persists till it demerges with discolouration of putrefaction** (Ref: R - 134)
 Changes in post mortem lividity occur when putrefaction sets in. In early stages, there is haemolysis of blood and diffusion of blood pigment into the surrounding tissues, where it may undergo secondary changes, Eg: sulphaemoglobin formation. The capillary endothelium and the surrounding cells show lytic changes. As decomposition progresses, the lividity becomes dusky in colour and turns brown and green before finally disappearing with the destruction of blood.
96. **(a) Prolonged suspension after death** (Ref: R - 132)
 i) If the body lying on back post mortem Hypostasis first appears in neck and then spreads over the back
 ii) If the body is lying in prone position, it appears in the loose connective tissues in front
 iii) If the body is lying on one side, it will settle on that side.
 iv) If a body is inverted as in drunken persons who slide out of bed, hypostasis will appear in the head and neck
 v) In drowning, post mortem hypostasis is usually found on the face, upper part of chest, hands, lower arms, feet and calves, as they are dependent parts.
97. **(b) Carbon monoxide** (Ref: R - 134)
 Others - Hydrocyanic acid, burns } Bright red
 nitrites, potassium chlorate, Aniline, } Copper brown
 potassium Bicarbonate, Nitrobenzene
 Phosphorus } Dark brown / Yellow
 Asphyxia } Bluish violet / Purple
 Bodies from cold water } Bright pink
98. **(a) Strychnine Poisoning** (Ref: R - 137)
 Temperature remains raised for the first two hours after death. other
 Egs - Sun stroke, nervous disorders, Tetanus, Septicemia
99. **(d) Aniline poisoning** (Ref: R - 134)
 It is due to formation of meth-haemoglobin. other Eg:-
 i) Clostridium perfringens septicemia with septic abortion produces brown colour
 ii) Infection combined with DIC sometimes causes blotchy purplish, red or pink rashes which may be mistaken for bruises or abrasions.
100. **(c) 3 - 6 hours** (Ref: R - 136)
 Onset, of Rigor is 1-2 hours, but since here 'develops' is asked, answer is 3-6 hours. Conditions altering the onset and duration of rigor.

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- i) Age
- ii) Nature of death
- iii) Muscular state
- iv) Atmospheric conditions

101. (d) 6 - 7 hours (Ref: R - 133)

Ref: Q.22. Fixation occurs earlier in summer and is delayed in asphyxial deaths and in IC lesions. Some authors are of the opinion that hypostasis doesn't get fixed. Non displacement or non-shifting of lividity is due to haemoconcentration by loss of fluid which penetrates the walls of those vessels related to hydrostatic pressure.

102. (c) Cholera (Ref: AN 153, R - 132)

Hypostatic congestion, resembling post mortem staining may be seen a few hours before death in case of person dying slowly with circulatory failure, Eg:- Cholera, typhus, tuberculosis, uraemia, morphine and barbiturate poisoning, CCF, deep coma, asphyxia. In such cases hypostasis will be marked shortly after death.

103. (b) Frost Bite (Ref: R - 131)

This is called post mortem calorificity.

- i) In sun stroke - Regulation of heat production had been severely disturbed
- ii) Tetanus, strychnine- Great increase in heat production due to convulsions
- iii) Septicaemia - Excessive bacterial activity

104. (a) Upper eyelids (Ref: R - 135)

Rigor mortis is the state of stiffening of muscles, with molecular death. Rigor first appears in involuntary muscles, the myocardium becomes rigid in an hour. It begins in the upper eyelids, neck and lower Jaw and passes upwards to the muscles of the face and downwards to the muscles of the chest, upper limbs, abdomen, lower limbs, and lastly in finger and toes.

105. (a) Cadaveric spasm (Ref: R - 137)

Mummification is a modification of putrefaction. Algor Mortis is the post mortem cooling of body. Cadaveric spasm is the stiffening of body muscles without molecular death, after death.

106. (a) Eye lids (Ref: Parikh 6/e 315)

Post mortem rigidity generally passes off in the same order in which it occurred. First involuntary muscles, then voluntary muscles. First voluntary muscle is eyelids and last to be affected are small muscles of the fingers and toes.

107. (c) Stiffens and shortens (Ref: R - 135)

The separation of actin and myosin filaments requires ATP; this is the energy needed for contraction. At the time of somatic death enough ATP is present in the muscle to maintain relaxation. After death, ATP is progressively and irreversibly destroyed leading to increased accumulation of lactates and phosphates in the muscles. When ATP is reduced to critical level of 85% of normal, the overlapping portions of actomyosin, which is viscous and inextensible, and causes rigidity of muscle rigor. When the lactic acid concentration reaches a level of 0.3%, muscles go into irreversible state of contraction called rigor mortis.

108. (b) Diatoms has an extracellular coat composed of magnesium (Ref: R - 325)

The extracellular coat is composed of silica and not magnesium. Their cell walls are usually impregnated with silica and contain chlorophyll and diatomin, a brown pigment. Diatoms secrete a hard siliceous outer box like skeleton called a frustule. Rest of the statements are true.

109. (b) Drowning in fast flowing river (Ref: R - 133)

Post mortem lividity occurs due to blood gravitating - distension of toneless capillaries, small veins of the dependant parts of the body and stagnating there. It doesn't occur if position of body is constantly changing and blood doesn't get time to accumulate at a particular point or Area. Eg: Flowing water. Similarly Post mortem lividity may not develop over areas of contact flattening, because blood capillaries are collapsed due to pressure.

110. (b) Drowning (Ref: R - 325)

Here, fluid actually penetrates alveolar walls to enter tissues and Blood Vessels. The alveolar walls may rupture due to increased pressure of forced expiration, and produce haemorrhages which when present subpleurally is called paultauf's haemorrhage. They are shining, pale bluish red and may be minute to 3-5 cm in diameter.

111. (a) Brain, Heart , Uterus (Ref: R - 142)

As a general rule, putrefaction follows this order

- 1) Larynx and Trachea
- 2) Stomach, intestines and spleen
- 3) Liver and lungs
- 4) Brain
- 5) Heart
- 6) Kidney, Bladder, Uterus
- 7) Skin, Muscle, Tendons
- 8) Bones

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112. (b) Uterus (Ref: Parikh 326)

In females, ovaries and non-gravid uterus are last to decompose. In Males, prostate and testis are last to decompose. First external sign of putrefaction is greenish discolouration over caecum and flanks (12-24 hours). First signs of internal putrefaction is a greenish discolouration on the undersurface of the liver.

113. (a) Greenish discolouration over skin of Right iliac fossa.

(Ref: R - 142)

Ref: Q.39. The greenish discolouration over right iliac fossa appears in about 12-14 hours. (6 hours in summer and may be delayed by even a day in winter). The whole body is discoloured within the next 24 hours.

114. (d) Maceration (Ref: R - 139, 376)

Maceration is a process which a foetus follows, if it dies in utero. Here an aseptic autolysis of the foetus commences immediately; because the membranes are not ruptured and the foetus is enclosed in it in a sterile condition. If the membranes are ruptured after the death of the foetus and air gains entry into liquor, the fetus undergoes putrefaction instead of maceration.

115. (b) Prostate (Ref: R - 142)

Ref: Q. 39.

The softer the organ, the more blood it contains, and nearer to the sources of bacteria, the more rapidly it putrefies. The organs composed of muscular tissue and those containing large amount of fibrous tissue resist putrefaction longer than the parenchymatous organs with the exception of the stomach and intestine, which because of the contents at the time of death decompose rapidly.

116. (a) Liver (Ref: R - 142)

Ref: Q.39

117. (a) Carbolic Acid & (d) Nux-Vomica (Ref: Parikh Pg 329,330)

Others are

- i) Zinc chloride
- ii) Heavy Metal poisoning like Arsenic and antimony

118. (b) Desiccation (Ref: R - 145)

Mummification is characterised by dehydration or desiccation of body tissues and viscera after death. The ideal conditions for its formation are high atmospheric temperature, devoid of moisture, with a free circulation of air around the body. As explained earlier, neonates & IUFD, still births are free from organisms and so do not develop putrefactive changes and undergo mummification.

- 119. (a) Duration since death** (Ref: R - 140)
 Maggots have proteolytic enzymes and penetrate the skin fairly rapidly. This allows air to enter under the skin and more maggots into the body cavity. The activities of maggots may raise the temperature to something near or above normal body heat.
- 120. (b) 2 to 3 days** (Ref: R - 149)
 Flies may deposit maggot eggs on fresh corpses, between the lips or the eyelids, in the nostrils, genitalia or in the margins of a fresh wound within a few minutes after death; When skin decomposition begins, maggots can be deposited anywhere. within a day, maggots are produced from eggs.
- 121. (b) 1-2 days** (Ref: R - 149)
- 122. (d) All** (Ref: R - 145)
 Mummification is a modification of putrefaction wherein dehydration or drying and shrivelling, of the cadaver occurs from the evaporation of water but the natural appearances and features of the body are preserved. It occurs in bodies buried in shallow graves in dry sandy soils, where evaporation of body fluids is very rapid due to hot dry winds. Chronic Arsenic or antimony poisoning is said to favour the process.
- 123. (b) It is due to hydrogenation of subcutaneous fat** (Ref: R - 144)
 It is modification of putrefaction, where in fatty tissues of the body change into a substance called adipocere. It is seen commonly in bodies immersed in water or in damp, warm environment. The change is due to gradual hydrolysis and hydrogenation of preexisting fats such as olein, into higher fatty acids which combine with calcium, ammonium ions to form insoluble soaps, which being acidic, inhibit putrefaction.
- 124. (a) Putrefaction** (Ref: R - 143)
 In liver putrefaction, multiple blisters appear in 24 to 36 hours. Cl. Welchii form characteristic small clumps in a tissue space and produce gas, which soon increases in size. When bubbles develop, the organ has a honey combed, vesicular or foamy appearance. This is called foamy liver.
- 125. (c) Putrefaction** (Ref: R - 143)
 Ref. Q.51. Additional info -
 Further the greenish discolouration extends to the whole organ, which finally becomes coat black. In newborn children, the liver putrefies earlier than in adults.

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126. (c) The abdominal cavity

127. (a) Fibrinous clots in heart (Ref: R - 96)

Post Mortem clots:-

- i) When blood clots rapidly a soft, lumpy, uniformly dark - red, slippery, moist clot is produced (black current jelly).
- ii) When red cells sediment before blood coagulates the red cells produce a clot similar to the first type - Above this, a pale or bright yellow layer of serum and fibrin is seen (chicken fat). Both of them are moist, smooth shiny rubbery, homogenous, loosely or not at all attached to the underlying wall. They are called cardiac polyps.

128. (a) Arsenic

Besides the evidence of Arsenic, in burnt bones, here are some of the internal Post-Mortem appearances. In stomach mucosa is swollen, edematous esp. in pyloric region. Small intestine flaccid, nephritis in kidneys. GI haemorrhages, subendocardial, petechial haemorrhages of ventricle are common. Meninges are congested.

129. (a) Starvation (Ref: R - 294)

Fat is almost completely absent in subcutaneous tissues and also in the omentum, mesentery and absent in the internal organs, which is never seen in wasting disease. The fat of female breast and of the orbit is spared till late. Subepicardial fat becomes replaced by a watery gelatinous material. In acute starvation, subcutaneous body fat is not lost completely.

130. (b) Distended with bile (Ref: R - 295)

Other GI organs:

- | | |
|----------------------|--|
| Stomach / Intestines | - Atrophy of all coats; mucosa stained with bile |
| Bowel | - Contains offensive watery fluid and gas |
| Liver | - Atrophied / sometimes necrosis |
| Spleen | - Shrunken |
| Kidney | - Atrophy of nephron |
| Ascites | - Sometimes (10%) |

131. (b) Spongy or Crepitant (Ref: R - 378)

Besides (b) other conditions where hydrostatic test is not necessary

- i) Foetus is a monster
- ii) Macerated or mummified
- iii) Born before 180 days of gestation
- iv) Stomach contains milk
- v) The umbilical cord has separated and a scar has formed.

132. (b) Back side (Ref: R - 102)

Body is prone with wooden block placed under the chest and head is bent backwards. This stretches the cervical spine. An incision is made on the back in midline extending from the occipital protuberance to the lower end of sacrum and the muscles are dissected away from the top of the spinal column noting their condition. The laminae are sawed close to the transverse processes. After splitting dura, nerves are cut from below up as they pass through spinal foramina.

133. (a) Bruising in inner aspect of upper lip (Ref: R - 316)

b),c),d) are features strongly suggestive of throttling or manual strangulation. Smothering is a form of asphyxia which is caused by closing the external respiratory orifices either by the hand or by other means, or blocking up, cavities of the nose or mouth by introduction of mud, paper cloth etc., This produce abrasive lesions in mouth, nose, lips.

134. (a) Whole body (Ref: R - 87)

In every case the autopsy must be complete, all the body cavities should be opened, and every organ must be examined, because evidence contributory to the cause of death may be found in more than one organ. Partial autopsies have no place in forensic pathologic practise.

135. (a) The authority who had conducted inquest in that case
(Ref: R - 88)

By principal of exclusion, (a) is proved