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CERTIFICATION PROGRAM

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Karnes City Volunteer Fire Department

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Section 1
FIRE DEPARTMENT ORGANIZATION - 18 HOURS
BASIC - 2 Hours

1-01.01 The firefighter shall identify the organization of the fire department.

1-01.02 The firefighter shall identify the size of the fire department, the scope of its operation, and the Standard Operational Procedures (SOP's).

1-01.03 The firefighter shall identify the fire department rules and regulations as they apply to all members of the department.

INTERMEDIATE - 16 Hours
Incident Command System

1-02.01 The firefighter shall define the incident command system (ICS).

1-02.02 The firefighter shall list the seven (7) reasons for an ICS.

1-02.03 The firefighter shall list the five (5) functional areas of the ICS organizational structure.

1-02.04 The firefighter shall list the basic responsibilities of the Incident Commander.

1-02.05 The firefighter shall define the following terms: A. operations B. planning C. logistics D. finance

1-02.06 The firefighter shall define, demonstrate and apply the command staff functions of an ICS system.

ADVANCED – 0 Hours

Section 2
FORCIBLE ENTRY - 10 HOURS
BASIC - 2 Hours

2-01.01 The firefighter shall identify and demonstrate the use of various types of forcible entry tools: A. prybar B. halligan tools C. spanner wrench D. axe E. other.

2-01.02 The firefighter shall identify the method and procedure of proper cleaning, maintenance and inspection of various types of forcible entry tools and equipment.

INTERMEDIATE - 4 Hours

2-02.01 The firefighter shall identify materials and construction features of doors, windows, roof, floors and vertical barriers and shall define the dangers associated with each in an emergency situation.

ADVANCED - 4 Hours

2-03.01 The firefighter shall identify the method and technique of forcible entry through any door, window, ceiling, roof, floor and vertical barrier.

Section 3

FIRE SERVICE LADDER PRACTICES - 32 HOURS

BASIC - 12 Hours

3-01.01 The firefighter shall identify each type of ladder and define its use.

3-01.02 The firefighter shall identify and name the parts of various fire service ladders.

3-01.03 The firefighter shall identify the safety aspects of handling, raising, and climbing ladders: A. Carrying 1. moving/guiding 2. other personnel 3. obstacles B. Location and Footing 1. location of fire 2. stability of building 3. firm, slippery, uneven surfaces 4. overhead: a. electricity b. windows c. falling debris d. overhangs C. Raising and Climbing 1. full protective equipment 2. proper lifting methods 3. ladder angle and spacing 4. pawls locked and halyard tied 5. heel person and tying ladder 6. hand placement and positioning 7. climbing with same hand and foot D. Working from ladder 1. safety belts 2. leg locks 3. climbing with and using hoses E. Aerial Ladders 1. overhead obstacles 2. zone of collapse 3. proper placement.

3-01.04 The firefighter shall identify how to select the proper ladder for the job to be done, and the maximum working heights for fire service ladders.

3-01.05 The firefighter shall identify the proper placement and positioning of each type of fire service ladder for different types of jobs.

3-01.06 The firefighter, operating as an individual and as a member of a team, shall demonstrate or explain knowledge of the following ladder carries: A. one-man B. two-man C. three-man D. four-man E. five-man F. six-man.

3-01.07 The firefighter, operating as an individual and as a member of a team, shall raise each type and size of ground ladder, available to the local jurisdiction having authority, using several different raises for each.

3-01.08 The firefighter shall, with or without a life belt, climb the full length of each type of ground and aerial ladder available to the authority having jurisdiction and demonstrate:

A. climbing the full length of each type of ground and aerial ladder carrying fire fighting tools or equipment while ascending and descending

B. climbing the full length of each type of ground and aerial ladder and bring an injured person down.

C. the techniques of working from ground and aerial ladders with tools and appliances.

3-01.09 The firefighter shall demonstrate the technique of cleaning ladders.

INTERMEDIATE - 8 Hours

3-02.01 The firefighter shall identify the materials used in ladder construction and list the advantages and disadvantages of each type of material.

3-02.02 The firefighter shall identify the load safety features of all ground and aerial ladders.

3-02.03 The firefighter shall demonstrate inspection and maintenance techniques for different types of ground and aerial ladders available to the local authority having jurisdiction.

ADVANCED - 12 Hours

3-03.01 The firefighter shall identify and explain the several special uses for ground ladders.

3-03.02 The firefighter shall identify and explain the annual service test for ground ladders.

3-03.03 The firefighter, operating as an individual and as a member of a team, shall demonstrate the following ladder carries: A. one-man B. two-man C. three-man D. four-man E. five-man F. six-man. The ladder shall be positioned flat on the ground during this demonstration.

3-03.04 The firefighter, operating as an individual and as a member of a team, shall raise each type and size of ground ladder using several different raises for each.

3-03.05 The firefighter shall, with or without a life belt, climb the full length of each type of ground and aerial ladder and demonstrate: A. climbing the full length of each type of ground and aerial ladder, carrying fire fighting tools or equipment, while ascending or descending.

B. climbing the full length of each type of ground and aerial ladder and bring an injured person down.

C. the techniques of working from ground and aerial ladders with tools and appliances.

Section 4

FIRE HOSE PRACTICES - 32 HOURS

BASIC - 12 Hours

4-01.01 The firefighter shall identify the sizes, types, amounts, and use of hose carried on fire apparatus.

4-01.02 The firefighter shall demonstrate the use of nozzles, hose adapters, and hose appliances carried on the local fire apparatus.

4-01.03 The firefighter, given the necessary equipment and operating as an individual and as a member of a team, shall advance dry hose lines of two different sizes, both of which shall be 1½ inches or larger, from fire apparatus: A. into a structure B. up a ladder into an upper floor window C. up an inside stairway to an upper floor D. up an outside stairway to an upper floor E. down an inside stairway to a lower floor F. down an outside stairway to a lower floor G. to an upper floor by hoisting.

4-01.04 The firefighter, given the necessary equipment and operating as an individual and as a member of a team, shall advance charged attack line of two different sizes, both of which shall be 1½ inches or larger, from fire apparatus: A. into a structure B. up a ladder into an upper floor window C. up an inside stairway to an upper floor D. up an outside stairway to an upper floor E. down an inside stairway to a lower floor F. down an outside stairway to a lower floor G. to an upper floor by hoisting.

4-01.05 The firefighter shall demonstrate the techniques for cleaning fire hose, couplings, and nozzles; and inspecting for damage.

4-01.06 The firefighter shall connect a fire hose to a hydrant, and fully open and close the hydrant.
4-01.07 The firefighter shall demonstrate the loading of fire hose on fire apparatus and identify the purpose of at least three types of hose loads and finishes.
4-01.08 The firefighter shall demonstrate three types of hose rolls.
4-01.09 The firefighter shall demonstrate two types of hose carries.
4-01.10 The firefighter shall demonstrate coupling and uncoupling fire hose.
4-01.11 The firefighter shall work from a ladder with a charged attack line, which shall be 1½ inches or larger.
4-01.12 The firefighter shall demonstrate the techniques of carrying hose into a building to be connected to a standpipe, and of advancing a hose line from a standpipe.
4-01.13 The firefighter shall demonstrate the method for extending a hose line.
4-01.14 The firefighter shall demonstrate replacing a burst section of hose line.

INTERMEDIATE - 10 Hours

4-02.01 The firefighter shall identify, select, and demonstrate the use of any nozzle.
4-02.02 The firefighter shall demonstrate all hand hose lays.
4-02.03 The firefighter shall demonstrate inspection and maintenance of fire hose, couplings, and nozzles, and recommend replacement or repair as needed.
4-02.04 The firefighter shall demonstrate all hydrant to fire apparatus hose connections.
4-02.05 The firefighter shall select adapters and appliances to be used in a specific fireground operation.

ADVANCED - 10 Hours

4-03.01 The firefighter shall conduct an annual service test for fire hose.
4-03.02 The firefighter shall identify hose classifications by use and construction.
4-03.03 The firefighter shall identify types of fire hose couplings.
4-03.04 The firefighter shall identify the methods of constructing fire hose couplings.
4-03.05 The firefighter shall identify the methods of attaching couplings to fire hose.

Section 5
SALVAGE AND OVERHAUL - 16 HOURS
BASIC - 6 Hours

5-01.01 The firefighter shall identify the purpose of salvage, and its value to the public and the fire department.
5-01.02 The firefighter, as an individual and as a member of a team, shall demonstrate folds and rolls of salvage covers.
5-01.03 The firefighter, as an individual and as a member of a team, shall demonstrate salvage cover throws.
5-01.04 The firefighter shall demonstrate the techniques of inspection, cleaning, and maintaining salvage equipment.
5-01.05 The firefighter shall identify the purpose of overhaul.
5-01.06 The firefighter shall demonstrate searching for hidden fires.
5-01.07 The firefighter shall demonstrate exposure of hidden fires by opening ceilings, walls, floors, and pulling apart burned materials.
5-01.08 The firefighter shall demonstrate how to separate and remove charred material from unburned material.
5-01.09 The firefighter shall define duties of firefighters left at the scene for fire and security surveillance.

INTERMEDIATE - 6 Hours

5-02.01 The firefighter, given salvage equipment, operating as an individual and as a member of a team, shall demonstrate the construction and use of a water chute and a water catchall.
5-02.02 The firefighter, given salvage equipment except salvage covers, shall demonstrate the removal of debris, and removal and routing of water from a structure.
5-02.03 The firefighter shall demonstrate the covering or closing of openings made during fire fighting operations.
5-02.04 The firefighter shall list the procedures to follow during overhaul.
5-02.05 The firefighter shall identify the safety precautions necessary during overhaul.

ADVANCED - 4 Hours

5-03.01 The firefighter shall list five (5) indicators of structural instability.
5-03.02 The firefighter shall identify precautions to be followed when overhauling targeted hazards.
5-03.03 The firefighter shall list four (4) indicators of fire in walls or ceilings.
5-03.04 The firefighter shall demonstrate recognition and preservation of evidence of arson.
5-03.05 The firefighter shall demonstrate restoration of a premises after a fire.

Section 6
FIRE STREAMS - 24 HOURS
BASIC - 8 Hours

6-01.01 The firefighter shall define a fire stream.
6-01.02 The firefighter shall manipulate a nozzle so as to attack a Class A and a Class B fire.
6-01.03 The firefighter shall define water hammer and at least one method for its prevention.
6-01.04 The firefighter shall demonstrate how to open and close a nozzle.
6-01.05 The firefighter shall define the following methods of water application: A. direct B. indirect C. combination.
6-01.06 The firefighter, given specific fire situations, shall select the proper nozzle and hose size for each.
6-01.07 The firefighter shall identify characteristics of all types of fire streams.
6-01.08 The firefighter shall identify precautions to be followed while advancing hose lines to a fire.
6-01.09 The firefighter shall identify three (3) conditions that result in pressure losses in a hose line.

INTERMEDIATE - 8 Hours

6-02.01 The firefighter shall describe the operating principles of fog and smooth bore nozzles.
6-02.02 The firefighter shall describe the advantages and disadvantages of solid and fog streams.
6-02.03 The firefighter shall identify four (4) special stream nozzles and demonstrate at least two (2) uses or applications for each.
6-02.04 The firefighter shall identify and define foam making appliances and shall demonstrate a foam stream from each.
6-02.05 The firefighter shall identify three (3) observable results that are obtained when proper application of a fire stream is accomplished.
6-02.06 The firefighter shall identify and define those items required to develop three (3) types of fire streams and shall demonstrate each.

ADVANCED - 8 Hours

6-03.01 The firefighter shall define the methods by which foam prevents or controls a hazard.
6-03.02 The firefighter shall define the principle by which foam is generated.
6-03.03 The firefighter shall define common causes for the poor generation of foam and identify the procedures for correcting each.
6-03.04 The firefighter shall define the difference between hydrocarbon and polar solvent fuels and identify the type of foam concentrate required for each fuel.
6-03.05 The firefighter shall define the advantages, characteristics, and precautions for use of the following types of foam: A. protein B. fluoroprotein C. film forming fluoroprotein (FFFP) D. aqueous film forming foam (AFFF) E. hazardous materials vapor mitigating foam F. medium- and high-expansion foam G. Class A foams H. Alcohol Type Concentrate (ATC).

6-03.06 The firefighter, given the size of the fuel surface, the types of fuel involved, and the type of foam concentrate being used, shall determine the minimum application rate necessary for extinguishment of a fire.

6-03.07 The firefighter shall define the precautions that must be taken when using high expansion foam to attack structural fires.

6-03.08 The firefighter shall diagram the types of fog nozzles, identify the major parts, and trace water flow through each.

6-03.09 The firefighter, given a selection of nozzles and tips, shall identify the type, design, operation, nozzle pressure, and flow of each.

6-03.10 The firefighter shall identify the rate of water flow necessary to control fire in a room of specified volume.

Section 7
APPARATUS FAMILIARIZATION - 6 HOURS
BASIC - 6 Hours

7-01.01 The firefighter shall be able to identify various types of automotive fire apparatus.

7-01.02 The firefighter shall identify various types of fire apparatus pumps and pumps components, and their functions.

7-01.03 The firefighter shall identify various types of aerial apparatus components and their functions.

7-01.04 The firefighter shall identify various types of tools and appliances, and their location on the fire department apparatus.

INTERMEDIATE – 0 Hours
ADVANCED – 0 Hours

Section 8
VENTILATION PRACTICES - 24 HOURS
BASIC - 8 Hours

8-01.01 The firefighter shall define the principles of ventilation, and identify the advantages and effects of ventilation.

8-01.02 The firefighter shall identify the dangers present, and the precautions to be taken in performing ventilation.

8-01.03 The firefighter shall demonstrate opening various types of windows from inside and outside, with and without fire department tools.

8-01.04 The firefighter shall demonstrate breaking window or door glass, and removing obstructions.

8-01.05 The firefighter, using an axe, shall demonstrate ventilation of a roof and a floor.

8-01.06 The firefighter shall demonstrate ventilation using a water fog.

8-01.07 The firefighter shall define theory of a back draft explosion.

8-01.08 The firefighter shall identify signs of a potential flashover.

INTERMEDIATE - 8 Hours

8-02.01 The firefighter shall demonstrate the use of different types of power saws and jack hammers.

8-02.02 The firefighter shall identify the different types of roofs, demonstrate the techniques used to ventilate each type, and identify the necessary precautions.

8-02.03 The firefighter shall identify the size and location of an opening for ventilation, and the precautions to be taken during ventilation.

8-02.04 The firefighter shall demonstrate the removal of skylights, scuttle covers, and other covers on rooftops.

8-02.05 The firefighter shall demonstrate the types of equipment used for forced mechanical ventilation.

ADVANCED - 8 Hours

8-03.01 The firefighter shall identify and demonstrate natural and mechanical methods for horizontal ventilation of a structure.

8-03.02 The firefighter shall identify and demonstrate natural and mechanical methods for vertical ventilation of a structure.

8-03.03 The firefighter shall identify the location of the opening, the method to be used, and the precautions to be taken when ventilating a basement.

Section 9

RESCUE OPERATIONS - 44 HOURS

BASIC - 12 Hours

9-01.01 The firefighter shall define safety procedures as they apply to rescue.

9-01.02 The firefighter shall define the uses of a lifeline.

9-01.03 The firefighter, given the proper information, shall list the life threatening injuries that need to be observed in the proper order of priority.

9-01.04 The firefighter shall, given victims and the proper equipment, demonstrate the proper techniques for removal of injured person(s) from hazards by the use of the following carries, drags and stretchers: A. one/two person victim standing B. seat carry C. extremities carry D. chair carry E. three-person carry F. lift and carry G. blanket drag.

9-01.05 The firefighter shall demonstrate the techniques of packaging a victim for emergency transportation by: A. given a short/long spine board and wrapping materials, demonstrate the stabilizing of a victims spine and cervical area of the body, and B. given a packaged victim and stretcher, demonstrate the transfer procedures of victims from their rescue scene.

9-01.06 The firefighter shall demonstrate searching for victims in burning, smoke-filled buildings, or other hostile environments: A. given the proper information, shall list two (2) objectives to be achieved while searching for victims in a building on fire and B. given a small one story building filled with simulated smoke,

shall demonstrate the establishing of a search pattern for the building and multiple rooms that are involved.

9-01.07 The firefighter shall explain search and rescue procedures for safe rescue of open water and swift water victims.

9-01.08 The firefighter shall describe or demonstrate the use of water rescue tools including: A. personal flotation devices B. pike poles C. shepherd's hook D. ring buoy E. rescue tube F. towel reach G. ladders H. dragging devices

9-01.09 The firefighter shall identify and explain low water crossings and their hazards, low head damns and their hazards.

INTERMEDIATE - 18 Hours

9-02.01 The firefighter shall describe the techniques and safety procedures as they apply to the following rescue activities: A. structural collapses B. trench collapses C. caves and tunnels D. water and ice emergencies E. elevators and escalators F. emergencies involving energized electrical lines G. industrial accidents H. motor vehicle accidents I. other hazards particular to the local jurisdiction.

9-02.02 The firefighter shall demonstrate the use of the following rescue tools: A. cribbing and shoring material B. block and tackle C. hydraulic devices D. pneumatic devices E. trench jacks F. water rescue devices.

9-02.03 The firefighter shall raise and lower a simulated victim 20 vertical feet (6m) using a rope rescue system.

ADVANCED - 14 Hours

9-03.01 The firefighter, operating as a member of a team, shall demonstrate the proper techniques and safety procedures as they apply to the following rescue activities: A. structural collapses B. trench collapses C. caves and tunnels D. water and ice emergencies E. elevators and escalators F. emergencies involving energized electrical lines G. industrial accidents H. motor vehicle accidents I. other hazards particular to the local jurisdiction.

9-03.02 The firefighter, given a 20’ tubular webbing, shall demonstrate the proper tying of a Swiss seat.

9-03.03 The firefighter, given the proper information, shall list the equipment needed to complete rappelling procedure.

9-03.04 The firefighter, given a 20' length of ½ inch rope, shall demonstrate the following knots: as used in repelling: A. figure-eight B. figure-eight follow through C. bowline D. clove hitch E. half-hitch.

9-03.05 The firefighter shall identify the techniques of removing debris, rubble, and other materials found at a cave-in and list the precautions to be taken when constructing rescue shafts and tunnels where large debris is involved.

9-03.06 The firefighter, given the proper information, shall define the following: A. lean-to collapse B. pancake floor collapse C. v-floor collapse

9-03.07 The firefighter shall assume command of a simulated rescue operation in the absence of a company officer.

FIRST AID - 40 HOURS
BASIC- 12 HOURS

10-01.01 The firefighter shall list the three (3) major roles and responsibilities of the first responder.
10-01.02 The firefighter shall describe all applicable legal aspects related to providing emergency care as a first responder.
10-01.03 The firefighter, given each vital sign, shall describe its normal and abnormal states and how he would check for the sign.
10-01.04 The firefighter shall identify the medical identification symbol.
10-01.05 The firefighter shall state the time in which brain cells will die without oxygen.
10-01.06 The firefighter shall identify a primary survey for life-threatening injuries.
10-01.07 The firefighter shall describe the signs of adequate and inadequate breathing.
10-01.08 The firefighter shall describe variations in design of the respiratory system for partial and total laryngectomies.
10-01.09 The firefighter shall describe airway care and resuscitation procedures for the laryngectomy.
10-01.10 The firefighter shall demonstrate mouth-to-mouth and mouth-to-nose resuscitation.
10-01.11 The firefighter shall demonstrate oronasal ventilation.
10-01.12 The firefighter shall list the signs of cardiac arrest.
10-01.13 The firefighter, given a diagram of the heart and its related organs, shall identify these organs and complications if CPR is performed incorrectly.
10-01.14 The firefighter shall list the signs of effective CPR.
10-01.15 The firefighter shall demonstrate one and two person cardiopulmonary resuscitation.
10-01.16 The firefighter, given a description of a type of bleeding, shall identify it as arterial, venous or capillary.
10-01.17 The firefighter shall describe why tourniquets are a last resort for controlling bleeding.
10-01.18 The firefighter shall demonstrate techniques for controlling external bleeding.
10-01.19 The firefighter shall demonstrate the proper technique for prevention and/or spread of infectious diseases and occupational exposure to bloodborne pathogens associated with emergency medical care.
10-01.20 The firefighter shall demonstrate the use, decontamination, disinfecting, and proper disposal of personal protective equipment used for protection from infectious diseases.
10-01.21 The firefighter shall identify major signs of, distinctions between, and initial treatment for heat cramps, heat exhaustion, and heatstroke.
10-01.22 The firefighter shall identify major signs of hypothermia.
10-01.23 The firefighter, given a description of patients exposed to heat and cold, shall identify the condition and describe emergency care procedures.
10-01.24 The firefighter shall describe the meaning of shock.

10-01.25 The firefighter, given a list of signs and symptoms, shall identify those associated with shock.
10-01.26 The firefighter shall describe anaphylactic shock.
10-01.27 The firefighter shall identify the treatment for anaphylactic shock.
10-01.28 The firefighter shall define the functions of the skeletal system.
10-01.29 The firefighter shall define and identify types of fractures, dislocations and sprains.
10-01.30 The firefighter, given a list of symptoms, shall identify those associated with fractures and dislocations.
10-01.31 The firefighter shall list the primary reason for splinting.
10-01.32 The firefighter, given descriptions of “patients" with injuries of the skull, spine and chest, shall identify the condition and describe appropriate emergency care.
10-01.33 The firefighter, given "patients", shall describe appropriate emergency care for any injuries to the spine. 10-01.34 The firefighter, given a specific situation, shall indicate: A. whether or not a patient should be moved, B. why the patient should or should not be moved, and C. if a move is necessary, how the move should be accomplished.
10-01.35 The firefighter, given descriptions of accident scenes, shall describe procedures for gaining access to patients: A. in closed upright vehicles B. in closed overturned vehicles C. pinned beneath vehicle D. pinned inside vehicle E. in vehicle with electrical hazards.

INTERMEDIATE – 12 Hours

10-02.01 The firefighter, given a description of patients, shall identify priority for triage purposes.
10-02.02 The firefighter shall demonstrate the emergency care for a person with known or suspected internal bleeding.
10-02.03 The firefighter, given specific situations and patients, shall perform a complete assessment for illnesses and injuries and describe appropriate emergency care procedures.
10-02.04 The firefighter, given a specific situation and patient, shall demonstrate and define the sequential emergency medical care indicated.
10-02.05 The firefighter shall describe safe procedures in use of oxygen.
10-02.06 The firefighter shall identify the two (2) main parts of the skull and describe their functions.
10-02.07 The firefighter shall define the following: A. heart attack B. angina C. heart failure D. stroke E. diabetic coma F. insulin shock G. grand mal seizures H. petite mal seizures.
10-02.08 The firefighter, given patients simulating heart attacks, angina, bean failure, stroke, and diabetic and epileptic conditions, shall identify the condition, note appropriate signs and describe appropriate care.

10-02.09 The firefighter, given descriptions of patients suffering from ingested poisons, inhaled poisons, bites and stings, alcohol abuse and drugs, shall identify the condition and describe appropriate emergency care.

10-02.10 The firefighter, given a list of statements, shall select general rules for splinting.

10-02.11 The firefighter, given descriptions of "patients" with injuries of the extremities, shall identify the injury and describe appropriate emergency care.

10-02.12 The firefighter shall identify and describe procedures for obtaining blood pressure by palpation and auscultation.

10-02.13 The firefighter shall identify the control center for breathing.

10-02.14 The firefighter, given a description of a wound type, shall describe management procedures and special considerations. Wound types will include: A. avulsed parts B. impaled objects C. protruding organs D. face and scalp wounds E. cheek wounds F. nosebleeds G. lacerated eye H. eye with penetrating object I. extruded eyeball J. arterial bleeding in the neck K. severe venous bleeding in the neck L. abdominal injuries M. genitalia injuries.

10-02.15 The firefighter, given an identified fracture, shall demonstrate the emergency medical care necessary to transport the victim.

ADVANCED-16 Hours

10-03.01 The firefighter, starting with the head and working to the feet, shall identify the major body components, cavities and organs.

10-03.02 The firefighter, given the name of each body system, shall identify its function.

10-03.03 The firefighter, given two or more body parts, shall describe their relationship using the terminology of topographic anatomy.

10-03.04 The firefighter shall identify and describe the function of each of the components of the respiratory system, and describe how air travels through the system to exchange oxygen and waste gases with the body.

10-03.05 The firefighter shall explain how the diaphragm, rib muscles and pleura operate to permit breathing.

10-03.06 The firefighter, given a diagram of the heart showing left and right chambers, shall indicate the flow of blood from the lungs, through the heart, and to the body.

10-03.07 The firefighter shall describe the composition and functions of blood.

10-03.08 The firefighter, given descriptions of “patients” burned by heat, shall indicate the degree and criticality of the burn and describe emergency care procedures.

10-03.09 The firefighter, given descriptions of “patients” burned by chemical and electricity, shall describe emergency care procedures.

10-03.10 The firefighter shall describe function, need, and safe procedures for use of: A. suctioning B. oropharyngeal airway C. bag-mask resuscitation

10-03.11 The firefighter shall demonstrate the use of breathing aid equipment.

10-03.12 The firefighter shall demonstrate emergency medical care of traumatic shock.

10-03.13 The firefighter shall describe procedures to follow in preparing for and assisting in normal and abnormal childbirth including caring for the mother and newborn.

10-03.14 The firefighter shall define breech birth and prolapsed cord.

10-03.15 The firefighter shall describe procedures to follow in the event of excessive bleeding and miscarriage.

10-03.16 The firefighter shall have knowledge of the general steps for use of an automated external defibrillator: A. The firefighter should know the abnormal heart rhythms commonly present during cardiac arrest. B. The firefighter should know what defibrillation is and how it works. C. The firefighter should know precautions for the use of an AED. D. The firefighter shall demonstrate the use of the AED.

COMPLETION OF THESE OBJECTIVES OR A TEXAS DEPARTMENT OF HEALTH ECA COURSE WILL SATISFY ALL OBJECTIVES AS LISTED IN THIS SECTION.

Section 11
INSPECTION PRACTICES - 24 HOURS
BASIC - 4 Hours

11-01.01 The firefighter shall identify the five (5) common causes of fires and their prevention.

11-01.02 The firefighter shall identify the fire inspection procedures.

11-01.03 The firefighter shall define the importance of public relations relative to inspection programs.

11-01.04 The firefighter shall define dwelling inspection procedures.

INTERMEDIATE - 8 Hours

11-02.01 The firefighter shall prepare diagrams or sketches of buildings to record the locations of items of concern during pre-fire planning operations.

11-02.02 The firefighter shall collect and record in writing, information required for the purpose of preparing a report on a building inspection or survey.

11-02.03 The firefighter shall identify school exit drill procedures.

11-02.04 The firefighter shall identify life safety programs for the home.

11-02.05 The firefighter shall identify common fire hazards and make recommendations for correction.

ADVANCED - 12 Hours

11-03.01 The firefighter shall write a building inspection report.

11-03.02 The firefighter shall identify that the fire extinguishers in an inspected premises conform to the fire prevention requirements.

11-03.03 The firefighter shall identify the procedures to be used whenever fire hazards, or suspected fire hazards, are encountered during inspections.

11-03.04 The firefighter shall identify the procedure for preparing a pre-fire plan.
11-03.05 The firefighter shall identify the dudes and responsibilities of a firefighter assigned to a fire prevention detail in place of public assembly.
11-03.06 The firefighter shall identify the fire exit requirements for different types of occupancies.
11-03.07 The firefighter shall identify the use and operation of various roof vents, both manual and automatic.
11-03.08 The firefighter shall inspect standpipe systems for fire protection, including visual inspection of hose (where provided), nozzles, hose outlet threads, and fire department connections.
11-03.09 The firefighter shall identify a private water system for fire protection, including fire pumps, yard hydrants, hose houses, gravity and pressure types of water storage tanks, reservoirs, and draft sources.
11-03.10 The firefighter shall identify smoke, flame, and heat-detection alarm systems.
11-03.11 The firefighter shall identify local and state fire codes concerning subjects to be noted in the fire company inspection.
11-03.12 The firefighter shall identify the area of responsibility of other municipal and state inspection agencies.
11-03.13 The firefighter shall identify the fire hazards commonly found in manufacturing, commercial, residential, and public assembly occupancies.
11-03.14 The firefighter shall identify common deficiencies in electrical services and equipment.
11-03.15 The firefighter shall identify standard types of chimneys and flues, and recognize deficiencies likely to cause fires.
11-03.16 The firefighter shall identify and define fire spread through air conditioning and utility ducts, and the functions of automatic and manual controls of these systems.
11-03.17 The firefighter shall identify local code requirements covering the proper storage and use of flammable liquids and gases.
11-03.18 The firefighter shall identify storage codes and practices contributing to fire safety in buildings, including proper piling, aisles, clearances, access to fire equipment and exits.
11-03.19 The firefighter shall identify proper outside storage and how it affects fire fighting, including aisles, roadways, access to hydrants, access to buildings, and exposure hazards.
11-03.20 The firefighter shall identify water and smoke damage potential to goods, to office and manufacturing machinery, and other valuable objects.
11-03.21 The firefighter shall identify legal issues concerning fire service inspections.

Section 12

WATER SUPPLIES - 12 HOURS

BASIC - 2 Hours

12-01.01 The firefighter shall identify the water distribution system, and other alternate water sources in the area of responsibility.

12-01.02 The firefighter shall identify the following parts of a water distribution system: A. distributors B. primary feeders C. secondary feeders.

12-01.03 The firefighter shall identify a: A. dry-barrel hydrant B. wet-barrel hydrant.

12-01.04 The firefighter shall identify the following: A. normal operating pressure of a water distribution system B. residual pressure of a water distribution system C. the flow pressure from an opening that is flowing water.

12-01.05 The firefighter shall demonstrate hydrant to pumper hose connections for forward and reverse hose lays.

INTERMEDIATE - 4 Hours

12-02.01 The firefighter shall identify the following types of water main valves: A. indicating B. non-indicating C. post indicators D. outside screw and yoke.

12-02.02 The firefighter shall identify hydrant usability by: A. obstruction to use of hydrant B. direction of hydrant outlets to suitability of use C. mechanical aboveground damage D. condition of paint for rust and corrosion E. the flow by fully operating the hydrant F. the ability to drain.

12-02.03 The firefighter shall define, explain, and demonstrate where applicable, the use of a rural dry fire hydrant system and static water supply source.

12-02.04 The firefighter shall define a tanker shuttle.

12-02.05 The firefighter shall identify the apparatus, equipment, and appliances required to provide water at rural locations by relay pumping, large diameter hose, or a tanker shuttle.

12-02.06 The firefighter shall demonstrate deployment of a portable water tank.

ADVANCED - 6 Hours

12-03.01 The firefighter shall identify and explain the four (4) fundamental components of a modem water system.

12-03.02 The firefighter, given a pitot tube and gauge, shall use, read, and record several flow pressures.

12-03.03 The firefighter, given a chart, size of openings, and flow pressures, shall determine the quantity of water flowing from the openings.

12-03.04 The firefighter, given a chart, shall identify the approximate discharge capacities of various water pipe sizes.

12-03.05 The firefighter shall identify the pipe sizes used in water distribution systems for residential, business, and industrial districts.

12-03.06 The firefighter shall identify two (2) causes of increased resistance or friction loss in water mains.

Section 13

FIRE PROTECTION SYSTEMS - 16 HOURS

BASIC - 2 Hours

13-01.01 The firefighter shall identify a fire department sprinkler connection and water motor alarm.

13-01.02 The firefighter shall connect hose line(s) to a fire department connection of a sprinkler or standpipe system.

13-01.03 The firefighter shall define how the automatic sprinkler heads open and release water.

13-01.04 The firefighter shall temporarily stop the flow of water from a sprinkler head.

INTERMEDIATE - 6 Hours

13-02.01 The firefighter shall identify the main drain valve on the system.

13-02.02 The firefighter shall open and close a main drain valve on the system.

13-02.03 The firefighter shall identify the main control valve on the system.

13-02.04 The firefighter shall operate a main control valve on the system from open to closed and back to open.

13-02.05 The firefighter shall define the value of automatic sprinklers in providing safety to the occupants in a structure.

13-02.06 The firefighter shall identify and define the dangers of premature closure of sprinkler main control valve, and of using hydrants to supply hose streams when the same water system is supplying the automatic sprinkler system.

13-02.07 The firefighter shall identify the difference between an automatic sprinkler system that provides complete coverage and a partial sprinkler system.

13-02.08 The firefighter shall identify at least three sources of water for supply to an automatic sprinkler system.

13-02.09 The firefighter shall identify the following: A. wet sprinkler system B. dry sprinkler system C. deluge sprinkler system D. residential sprinkler system.

13-02.10 The firefighter shall demonstrate removing one head from a sprinkler system and replacing it with a head of the same type.

ADVANCED - 8 Hours

13-03.01 The firefighter, given an alarm valve of an automatic sprinkler system, shall identify the operation of the valve.

13-03.02 The firefighter, given twelve various sprinkler heads, shall identify each of them correctly as to: A. temperature rating B. pendant or upright C. special types.

13-03.03 The firefighter shall identify the alarm test valve on the system.

13-03.04 The firefighter, given an automatic sprinkler system, shall operate the alarm test valve.

13-03.05 The firefighter, given a velocity drain valve or ball drip valve on the fire department connection of an automatic sprinkler system, shall demonstrate that the valve is operational and the pipe is drained.

13-03.06 The firefighter, given a check valve on the fire department connection to an automatic sprinkler system, shall identify the direction of flow of water through the valve.

13-03.07 The firefighter shall read and record the indicated pressures on all gauges provided on both a standard wet and standard dry system, and identify each gauge.

13-03.08 The firefighter shall define the reliability of automatic sprinkler systems, and give eight (8) reasons for unsatisfactory performance.

13-03.09 The firefighter, by inspection of an automatic sprinkler system in a building, shall identify obstructions to sprinkler heads and the required clearance.

13-03.10 The firefighter shall identify the types, components and operation of standpipe systems.

13-03.11 The firefighter shall identify various types of special extinguishing systems.

13-03.12 The firefighter shall identify various types of supervisory circuits.

13-03.13 The firefighter shall identify the function of a fire annunciator panel.

13-03.14 The firefighter shall identify various alarm initiating devices.

Section 14
TRANSPORTATION EMERGENCIES - 16 HOURS
BASIC - 2 Hours

14-01.01 The firefighter shall identify the modes of public transportation which operate within the jurisdiction having authority: A. aircraft B. trains C. over road buses and school buses D. trams E. monorails F. high speed rail system.

14-01.02 The firefighter shall identify the established procedures for control of movement for each of the identified transportation modes used within the local authority having jurisdiction: A. color code system for airport airfield lighting B. established procedures and verbal communication as used by Air Traffic Control, to control vehicle movements on taxiways and runways C. color code light system used for control and speed of trains D. verbal communications for movement of trains.

14-01.03 The firefighter, given a map of the municipality or airport, shall identify the traffic routes and traffic flow patterns including the parking and storage areas for the vehicles.

14-01.04 The firefighter, given a specific location in a municipality, shall identify the shortest route to a transportation incident.

INTERMEDIATE - 6 Hours

14-02.01 The firefighter shall identify the locations of the specialized fuel storage facilities and distribution systems for the transportation vehicles: A. distribution pipelines supplying the storage facilities and emergency shut-off valves or pumping stations B. supplier of the fuel and contact methods to supplier for emergency shut down C. construction and design of the storage tanks and built-in protection which may apply.

14-02.02 The firefighter shall identify and locate hazardous materials which may be carried by the various types of transportation vehicles: A. the hazards associated with fuels and chemicals used aboard the transportation vehicles B. using a diagram of appropriate vehicle, location where fuels and chemicals are located on the vehicles.

14-02.03 The firefighter shall identify the various openings available to emergency personnel for evacuating passengers and operators of the vehicles: A. identify on a diagram, the appropriate openings for egress and ingress. B. identify on a diagram, the location of area(s) where emergency cuts are to be made to effect rescue of personnel.

14-02.04 The firefighter shall identify the procedures, appropriate equipment and supplies for evacuation, removal and care of person(s) from the hazard area(s) of the vehicles.

ADVANCED - 8 Hours

14-03.01 The firefighter, as an individual, shall demonstrate the operation of all normal exits, and emergency exits and escape devices on each mode of transportation available in the local authority having jurisdiction, accomplishing all critical factors within the time frame required by the department.

14-03.02 The firefighter, as an individual, shall demonstrate the shutdown of the following systems on transportation vehicles: A. power plant B. electrical system C. hydraulic system, accomplishing all critical factors within the time frame required by the department.

14-03.03 The firefighter, as an individual or member of a team, shall demonstrate the procedures of evacuation, removal and care of person(s) from each type of vehicle within the local authority having jurisdiction.

Section 15
FIRE BEHAVIOR (FIRE SCIENCE) - 16 HOURS
BASIC – 8 Hours

15-01.01 The firefighter shall define heat and fire.

15-01.02 The firefighter shall define the fire triangle and tetrahedron.

15-01.03 The firefighter shall identify two (2) chemical, mechanical, and electrical energy heat sources.

15-01.04 The firefighter shall define the following stages of fire: A. incipient B. flame spread C. hot smoldering D. flashover E. steady state F. clear or free burning G. back draft explosion.

15-01.05 The firefighter shall define the three (3) methods of heat transfer.

15-01.06 The firefighter shall define the three (3) physical states of matter in which fuels are commonly found.

15-01.07 The firefighter shall define the hazard of finely divided fuels as they relate to the combustion process.

15-01.08 The firefighter shall define: A. flash point B. fire point C. ignition temperature D. upper and lower explosive limits.

15-01.09 The firefighter shall define concentrations of oxygen in air as it affects combustion.

15-01.10 The firefighter shall identify three products of combustion commonly found in structural fires which create a life hazard.

15-01.11 The firefighter shall identify characteristics of water as it relates to its fire extinguishing potential.

INTERMEDIATE - 2 Hours

15-02.01 The firefighter shall define the following units of measurements: A. British Thermal Unit (BTU) B. Fahrenheit (F°) C. Celsius (C°) D. Calorie (C) E. Joule, the SI unit for energy.

15-02.02 The firefighter shall define thermal balance and imbalance.

ADVANCED - 6 Hours

15-03.01 The firefighter shall identify chemical by-products of combustion.

15-03.02 The firefighter shall define the diffusion flame process.

15-03.03 The firefighter shall define the fire extinguishment theory.

15-03.04 The firefighter shall identify pressure and velocity.

Section 16
FIRE ALARMS AND COMMUNICATION – 8 HOURS
BASIC – 4 Hours

16-01.01 The firefighter shall define the procedure for a citizen to report a fire or other emergency.

16-01.02 The firefighter shall demonstrate receiving an alarm or a report of an emergency, and initiate action.

16-01.03 The firefighter shall define the purpose and function of all alarm-receiving instruments and personnel-alerting equipment provided in the fire station.

16-01.04 The firefighter shall identify traffic control devices installed in the fire station to facilitate the response of apparatus.

16-01.05 The firefighter shall identify procedures required for receipt and processing of business and personal calls.

16-01.06 The firefighter shall define and demonstrate prescribed fire department radio procedures including: A. routine traffic B. emergency traffic C. emergency evacuation signals.

16-01.07 The firefighter shall define policy and procedures concerning the ordering and transmitting of multiple alarms of fire and calls for special assistance from the emergency scene.

16-01.08 The firefighter shall define all fire alarm signals, including multiple alarms and special signals, governing the movements of fire apparatus, and the action to be taken upon the receipt of each signal.

INTERMEDIATE - 2 Hours

16-02.01 The firefighter shall identify areas assigned for first-alarm response.

16-02.02 The firefighter shall demonstrate both mobile and portable radio equipment.

16-02.03 The firefighter shall identify supervisory alarm equipment provided in the fire station and the prescribed action to be taken upon receipt of designated signals.

16-02.04 The firefighter shall identify fire location indicators provided to direct firefighters to specific locations in protected public or private properties.

ADVANCED - 2 Hours

16-03.01 The firefighter shall demonstrate the rewinding, resetting, or both, of any fire alarm boxes or devices on the public fire alarm system.

16-03.02 The firefighter shall demonstrate the ordering of multiple alarms and other calls for assistance from the fireground, (i.e. mutual aid).

16-03.03 The firefighter shall identify the types of supervisory alarm systems.

Section 17
PUBLIC RELATIONS - 4 HOURS
BASIC - 2 Hours

17-01.1 The firefighter shall identify the individual(s) responsible for public relations within the fire department or local authority having jurisdiction.

17-01.2 The firefighter shall identify rules and regulations regarding public relations and statements to the news media.

INTERMEDIATE – 0

ADVANCED - 2 Hours

17-03.01 The firefighter shall describe proper relations with the news media.

17-03.02 The firefighter shall describe various public views of firefighters by adults and by children.

17-03.03 The firefighter shall identify activities that may not reflect a positive image of the fire service or fire service professional.

Section 18
RECORDS AND REPORTS - 2 HOURS
BASIC - 2 Hours

18-01.01 The firefighter shall identify the fire incident reporting systems: NFIRS and TEXFIRS.

18-01.02 The firefighter shall identify the scope, purpose and benefits of the Texas and National Fire Incident Reporting Systems.

18-01.03 The firefighter shall identify the three (3) elements of a fire reporting system.

18-01.04 The firefighter shall identify report forms used by the local authority having jurisdiction: incident report form and casualty report form.

INTERMEDIATE - 0
ADVANCED – 0

Section 19
EMERGENCY VEHICLE OPERATIONS - 6 HOURS
BASIC - 6 Hours

19-01.01 The firefighter shall define and demonstrate the departmental policy and prescribed procedures for emergency vehicle response.
19-01.02 The firefighter shall define and explain the authority and responsibility of the emergency vehicle operator.
19-01.03 The firefighter shall identify and explain state and local laws governing emergency vehicle response.
19-01.04 The firefighter shall identify the prescribed methods used in driver selection, training, testing and licensing of emergency vehicle operators.

INTERMEDIATE - 0
ADVANCED – 0

Section 20
EMERGENCY MANAGEMENT - 2 HOURS
BASIC - 0
INTERMEDIATE - 0
ADVANCED - 2 Hours

20-03.01 The firefighter shall identify activities on a national level required by the Federal Emergency Management Agency (FEMA) to meet its responsibilities to establish and maintain comprehensive and coordinated emergency management in the United States.
20-03.02 The firefighter shall identify, by title, the official responsible for emergency management in the State of Texas.
20-03.03 The firefighter shall identify, by title, the official responsible for emergency management in a Texas county and designated by the Texas Disaster Act as Emergency Management Director for the county.
20-03.04 The firefighter shall identify, by title, the city official who is responsible for emergency management in a city in Texas and is designated by the Texas Disaster Act as Emergency Director for the city.
20-03.05 The firefighter shall identify department procedures for potential disasters in the area of their response.

Section 21
FIRE CAUSE AND ORIGIN - 8 HOURS
BASIC - 4 Hours

21-01.01 The firefighter shall identify the roles and responsibilities of a firefighter in determining point of origin.

21-01.02 The firefighter shall identify factors indicating fire cause.

21-01.03 The firefighter shall identify observations important to determining events of a fire.

INTERMEDIATE - 0
ADVANCED - 4 Hours

21-03.01 The firefighter shall define the importance of securing a fire scene to prevent unwarranted access.

21-03.02 The firefighter shall identify factors indicating arson.

21-03.03 The firefighter shall identify the importance of protecting evidence at a fire scene.

Section 22
LIVE FIRE TRAINING - 24 HOURS
BASIC - 4 Hours

22-01.01 The firefighter shall identify the current edition of NFPA 1403, Standard on Live Fire Training Evolutions and shall: A. identify the purpose of NFPA 1403 B. define evolution C. define student D. define instructor E. define training center burn building F. identify subjects required prior to participating in live fire training G. identify the minimum flow, in gallons per minute, required by each hose line used in live fire training H. identify the protective equipment required during live fire training.

INTERMEDIATE - 20 Hours

22-02.01 The firefighter, operating as the nozzle person and as a member of a team, shall control and/or extinguish the following live fires using appropriate protective equipment, fire fighting tools, and extinguishing agents: A. a one (1) room fire B. a two (2) room fire C. piles/stacks of class A combustible materials (exterior) D. open pans of combustible materials (exterior) E. vehicle fires F. storage containers and G. flammable gas cylinders (exterior).

22-02.02 The firefighter, operating as a member of a team, shall perform vertical ventilation during live fire training.

22-02.03 The firefighter, operating as a member of a team, shall perform horizontal ventilation during live fire training.

22-02.04 The firefighter, operating as an individual or a member of a team, shall carry and raise ladders during live fire training.

22-02.05 The firefighter shall extinguish a Class B fire with a portable fire extinguisher.

ADVANCED – 0

Section 23

FIREFIGHTER SAFETY/PERSONAL PROTECTIVE CLOTHING - 28 HOURS

BASIC - 8 Hours

23-01.01 The firefighter shall identify various types of fire service protective clothing such as structural, wildland, and ARFF. The firefighter shall also identify their components: A. turnouts B. helmets C. gloves D. boots E. SCBA.

23-01.02 The firefighter shall identify procedures for inspecting, cleaning, and maintaining the components of a personal protective ensemble after each use.

23-01.03 The firefighter shall describe the limitations of personnel working in a personal protective ensemble.

23-01.04 The firefighter shall demonstrate the operation of a Personal Alert Safety System (PASS) device.

23-01.05 The firefighter shall identify the safety procedures and precautions during fire apparatus operations: A. attire to be worn while riding on apparatus responding to an alarm and, B. describe/list safety precautions required while riding fire apparatus

23-01.06 The firefighter shall identify dangerous building conditions created by fire.

23-01.07 The firefighter shall define techniques for action when trapped or disoriented in a fire situation or in a hostile environment.

23-01.08 The firefighter shall define procedures to be used in electrical emergencies.

23-01.09 The firefighter shall define fire service lighting equipment.

23-01.10 The firefighter shall define safety procedures when using fire service lighting equipment.

23-01.11 The firefighter shall demonstrate the use of portable power plants, lights, cords, and connectors.

23-01.12 The firefighter shall define safety procedures as they apply to emergency operations, specifically: A. protective equipment B. team concept C. portable tools and equipment D. riding on apparatus, E. hazardous materials incidents.

23-01.13 The Firefighter shall identify the safety purpose of the 2 in 2 out rule per NFPA 1403.

INTERMEDIATE - 8 Hours

23-02.01 The firefighter shall demonstrate techniques for action when trapped or disoriented in a fire situation or hostile environment by: A. ability to read a preplan of a structure and diagram all possible escape routes prior to entry. B. exiting a smoke filled area by reversing the entry path while keeping in contact with a wall at all times, making all turns in the same direction (i.e. left or right) until out of the area. C. working with a charged line, protecting himself during flashover or falling burning ceilings, by immediately setting stream patterns to full fog, dropping to the floor, rolling onto back and using protective fog pattern to cool area directly overhead and, D. demonstrating by feel, knowledge of which direction of a coupled hose line leads to the nozzle end and which leads to the water supply.

ADVANCED -12 Hours

23-03.01 The firefighter shall define procedures to be used in electrical emergencies by: A. identifying four (4) agents for extinguishing fires in electrically energized equipment, B. identifying minimum safe distances from which he can apply water fog pattern to electrically energized equipment as determined by the voltage, C. identifying safe and unsafe areas for the placement of ground ladders near electrically energized wires, D. identifying types of conductive vs. non-conductive ladder construction materials, E. explaining the safest action to be taken when aerial apparatus may come in contact with electrically energized overhead wires, F. defining procedures for extinguishing transformer fires on utility poles. G. identifying precautions to be taken with downed electrical wires and explain methods of removing a victim who has come in contact with live wires. H. explaining the safe procedure when interrupting residential electrical service by cutting drip loops at weather head.

23-03.02 The firefighter shall review all Basic and Intermediate objectives and shall demonstrate proficiency in Basic and Intermediate skills.

Section 24

PUMP OPERATIONS/HYDRAULICS - 24 HOURS

BASIC - 8 Hours

24-01.01 The firefighter shall identify the operating principles of single stage and multi-stage centrifugal fire pumps as follows: A. The firefighter shall list the percentages of rated capacity rated pressures and capacity in gallons per minute at the rated pressures of a fire department pump. B. The firefighter, given a pump model/diagram, shall identify the main components indicating pump capacity, number of discharges and number of suction inlets. C. The firefighter shall "explain the difference between series/parallel operations of centrifugal fire pumps. D. The firefighter, given the proper information, shall list three (3) advantages of a centrifugal fire pump as compared to other types of fire pumps (i.e. positive displacement, rotary vane).

24-01.02 The firefighter shall demonstrate the use of mathematical calculations as required to solve fire department pumper hydraulic problems as follows: A. The firefighter shall list the mathematical orders of operation concerning addition, subtraction, multiplication, and division. B. The firefighter shall solve mathematical problems finding the square root, and decimal/fraction conversions. C. The firefighter shall list formulas used in finding GPM rates, friction loss of fire hose, engine pressure for hose layouts of nozzles, standpipe/sprinkler, master streams, and elevation operations. D. The firefighter, given the proper information, shall list conversion factors of fire hose that are smaller/larger than 2½ inches. E. The firefighter shall calculate the correct engine pressures for a specific situation.

24-01.03 The firefighter shall set up and perform pumping operations as follows: A. The firefighter shall list conditions that may result in pump damage. B. The firefighter, given a pump model or diagram, shall demonstrate the proper test/check inspection routines required to assure operational readiness. C. The firefighter, given a pump panel or diagram, shall identify all gauges and valves, and demonstrate their usage. D. The firefighter, given a pump panel or diagram, shall identify the proper usage of valves and gauges to obtain a flow of water from the following: 1. a 1 inch (booster line) discharge outlet 2. a 1½ or 1¾ inch discharge outlet 3. a 2½ inch discharge outlet 4. master stream discharge outlet (if applicable). E. The firefighter, given a pump panel or diagram, shall demonstrate the proper technique of hooking up or connecting intake hoses to the pumps. F. The firefighter, given an engine apparatus or diagram, shall demonstrate/list the engagement procedure of the PTO (power take-off) systems for the pumping apparatus. G. The firefighter, given a pump panel or diagram, shall demonstrate the proper procedure of valve manipulation to produce water from: 1. a positive water source 2. a static water source by drafting 3. booster tank.

INTERMEDIATE - 8 Hours

24-02.01 The firefighter shall identify the type, design, operation, nozzle pressure and flow in GPM of various types of nozzles.

24-02.02 The firefighter shall list the different types of fire streams.

24-02.03 The firefighter, given a 2½ inch straight stream nozzle, shall demonstrate the proper opening and closing techniques and line movement procedures.

24-02.04 The firefighter shall calculate nozzle reaction for various nozzle pressures.

24-02.05 The firefighter, given the proper information, shall list advantages and disadvantages of various nozzles: A. straight stream B. fog C. master stream.

24-02.06 The firefighter shall define water hammer and list ways of preventing water hammer.

24-02.07 The firefighter shall calculate the water flow rate needed to control fire in a room that is 20' x 20' x 8'.

24-02.08 The firefighter, given a diagram of various nozzles, shall list major parts and trace flow routes through each.

24-02.09 The firefighter shall list factors that influence fire steams.

24-02.10 The firefighter shall list the proper procedures for inspection and maintenance of fire fighting nozzles.

24-02.11 The firefighter shall demonstrate the operations of the pumper pressure relief system and/or pressure control valve as follows: A. The firefighter, given a pump panel, shall identify a pressure relief system. B. The firefighter shall list the reasons a pressure relief system is used. C. The firefighter shall list the different types of pressure relief systems used in the fire service. D. The firefighter shall list three (3) reasons of how excessive pressure develops in fire hose.

ADVANCED - 8 Hours

24-03.01 The firefighter shall identify terms relating to the principles of fire service hydraulics as follows: A. The firefighter shall list the forms water takes and advantages water exhibits as an extinguishing agent. B. The firefighter shall list six (6) types of pressure, which affect the properties of water in fire service hydraulics. C. The firefighter, given a pump diagram and flow chart, shall explain the theory of drafting and principle component uses in a drafting operation. D. The firefighter shall calculate the available water supply from a fire hydrant. E. The firefighter shall demonstrate assembly and connection of the equipment necessary for drafting from a static water supply source and demonstrate drafting operations.

Section 25

GROUND COVER FIREFIGHTING - 9 HOURS

BASIC - 3 Hours

25-01.01 The firefighter shall correctly define wildfire terms as used in the fire service: A. mop-up B. direct attack C. indirect attack D. fuel E. backfire/burnout F. barrier G. topography H. suppression I. fire behavor J. incident commander K. incendiary fire L. mutual aid M. fire season N. convection column O. tools used in ground cover fires.

25-01.02 The firefighter shall, given a specific wildland fire situation, describe the effect of fuel, weather and topography on wildland fire, and predict the direction and speed of the fire spread.

INTERMEDIATE - 6 Hours

25-02.01 The firefighter shall, given a specific wildland fire situation, construct hand and wet fire lines using safe and effective direct and indirect line construction techniques to control the fire within less than 10% increase in the perimeter.

25-02.02 The firefighter shall, given a specific wildland fire situation as reported, locate the fire relative to his present location and describe the factors involved to respond safely to that location within the response time standards of the department.

25-02.03 The firefighter shall, given a specific wildland fire situation, analyze (size up) the situation and using proper procedures, shall organize this information into a clear, concise report of conditions necessary to develop an initial plan of action to control the fire within 2 hours.

25-02.04 The firefighter shall, given a specific wildland fire situation with control lines established, insure complete extinguishment of the fire by employing recognized mop-up techniques.

25-02.05 The firefighter shall, given a residence within a wildland area, identify typical fire hazards and recommend corrective actions which are within his authority and ability to do.

25-02.06 The firefighter shall, given a specific wildland fire situation, list and describe recognized safety practices and corrective actions to be taken to ensure that the department does not have any injuries due to wildfire suppression effort.

Section 26
HAZARDOUS MATERIALS - 24 HOURS
BASIC - 8 Hours

26-01.01 The firefighter shall identify the purpose and content of the most current edition of NFPA 472, Standards for Professional Competence of First Responders to Hazardous Materials Incidents.

26-01.02 The firefighter shall demonstrate knowledge of what hazardous materials are, and the risks associated with them in an incident.

26-01.03 The firefighter shall demonstrate knowledge of the potential outcomes associated with an emergency created when hazardous materials are present.

26-01.04 The firefighter shall be able to recognize the presence of hazardous materials in an emergency.

26-01.05 The firefighter shall demonstrate knowledge of the role of the first responder awareness individual in the role of the department's emergency response plan including site and security control and the U.S. Department of Transportation (DOT) Emergency Response Guidebook.

26-01.06 The firefighter shall be able to recognize the need for additional resources, and have the ability to make appropriate notification to the communications center.

INTERMEDIATE - 8 Hours

26-02.01 The firefighter shall demonstrate knowledge of basic hazard and risk assessment techniques.

26-02.02 The firefighter shall know how to select and use proper personal protective equipment provided to the first responder operational level.

26-02.03 The firefighter shall demonstrate the knowledge of basic hazardous materials terms.

26-02.04 The firefighter shall demonstrate basic control, containment and/or confinement operations within the capabilities of the resources and personal protective equipment available to the local authority having jurisdiction.

ADVANCED - 8 Hours

26-03.01 The firefighter shall demonstrate knowledge of resource requirements and planning principles as related to hazardous materials response at the awareness level and operations level.

26-03.02 The firefighter shall demonstrate knowledge of the principles of classification, identification, and verification of hazardous materials at the awareness level and operations level.

26-03.03 The firefighter shall demonstrate how to implement basic decontamination procedures.

26-03.04 The firefighter shall demonstrate knowledge of standard operating procedures and termination procedures applicable to hazardous materials incident response.

SECTION 27

SELF-CONTAINED BREATHING APPARATUS - 32 HOURS

BASIC - 12 Hours

27-01.01 The firefighter shall identify at least four (4) hazardous respiratory environments encountered in fire fighting.

27-01.02 The firefighter shall demonstrate the use of self-contained breathing apparatus in conditions of obscured visibility.

27-01.03 The firefighter shall identify the physical requirements of the wearer, the limitations of the self-contained breathing apparatus, and the safety features of types of self-contained breathing apparatus available to local authority having jurisdiction.

27-01.04 The firefighter shall demonstrate donning self-contained breathing apparatus while wearing protective clothing.

27-01.05 The firefighter shall demonstrate that the self-contained breathing apparatus is in a safe condition for immediate use.

27-01.06 The firefighter shall identify the procedure for cleaning and sanitizing self-contained breathing apparatus for future use.

27-01.07 The firefighter shall demonstrate the use of SCBA in conditions of restricted passage.

27-01.08 The firefighter shall demonstrate replacement of an expended cylinder on an SCBA assembly with a full cylinder.

INTERMEDIATE - 12 Hours

27-02.01 The firefighter shall identify the procedure for daily inspections and maintenance of self-contained breathing apparatus.

27-02.02 The firefighter, given each type of self-contained breathing apparatus, shall demonstrate the correct procedure for recharging.

27-02.03 The firefighter shall demonstrate the following emergency techniques using self-contained breathing apparatus to: A. assist other firefighters B. conserve air C. show restrictions in use of by-pass valves D. breathing from the breathing tube or regulator in the event of a face piece failure.

27-02.04 The firefighter shall demonstrate the procedure for cleaning and sanitizing self-contained breathing apparatus for future use.

ADVANCED - 8 Hours

27-03.01 The firefighter shall identify and define the operational components of all types of protective breathing apparatus.

27-03.02 The firefighter, without compromising the rescuers respiratory protection, shall demonstrate rescue procedures for the following: A. a firefighter with functioning respiratory protection B. a firefighter without functioning respiratory protection C. a civilian without respiratory protection.

Section 28
ROPES - 16 HOURS
BASIC - 4 Hours

28-01.01 The firefighter, when given name, picture, or actual knot, shall identify it and describe the purpose for which it would be used: A. Becket (sheet) bend B. bowline C. clove hitch D. half sheep shank with a safety E. chimney hitch F. bowline on a bight G. half hitch H. figure-eight I. figure-eight on a bight J. figure-eight follow through.

28-01.02 The firefighter shall identify rope safety procedures. 28-01.03 The firefighter shall identify and/or demonstrate the terms used when tying a knot or hitch: A. standing part when tying a knot or hitch B. running part when tying a knot or hitch C. a bight when tying a knot or hitch D. a loop when tying a knot or hitch E. a round turn when tying a knot or hitch F. half hitch when tying a knot or hitch.

28-01.04 The firefighter shall identify the construction characteristics and appropriate uses of both natural and synthetic fiber ropes: A. Characteristics of natural fiber (manila) ropes for utility use only: 1. moisture retention 2. floatability 3. resistance to rot, mildew and attack by marine organisms 4. resistance to surface abrasion 5. resistance to acids, alkalis and solvents 6. safe working strength of new rope: a. 3/8 inch manila, b. ½ inch manila, c. 5/8 inch manila, d. ¾ inch manila B. Characteristics of synthetic ropes: 1. moisture retention 2. floatability 3. resistance to rot, mildew and attack by marine organisms 4. resistance to surface abrasion 4. resistance to acids, alkalis and solvents 5. safe working strength of new rope of: a. ½ inch nylon, dacron, polypropylene, braided nylon cover with nylon core; b. 5/8 inch nylon, dacron, polypropylene, braided nylon cover with nylon core; c. ¾ inch nylon, dacron, polypropylene, braided nylon cover with nylon core C. Uses of ropes: 1. hoisting tools and equipment 2. securing tools and equipment to immovable objects 3. rescue.

28-01.05 Define a life safety rope and one and two person life safety rope including: A. maximum working load B. safety factor C. minimum breaking strength.

28-01.06 The firefighter, when given the proper size and amount of rope, shall demonstrate tying the following knots: A. Becket (sheet) bend B. bowline C. clove hitch D. half sheep shank with a safety E. chimney hitch F. bowline on a bight G. half hitch H. figure-eight I. figure-eight on a bight J. figure-eight follow through.

INTERMEDIATE - 6 Hours

28-02.01 The firefighter, given the proper rope, shall demonstrate the bight, loop, round turn, and half hitch as used in tying knots and hitches.

28-02.02 The firefighter, using an approved knot, shall hoist any selected forcible entry tool, ground ladder, or appliance to a height of at least 20 ft: A. a 1½ inch or 1¾ inch dry hose with nozzle attached B. a 2½ inch or 3 inch dry hose with

nozzle attached C. a 1½ inch or 1¾ inch charged hose D. an axe E. a 6' or 8' pike pole F. a single 14' or 16' (wall) ladder G. a 10' collapsible ladder H. a 14' combination ladder I. working as a member of a team, a 24' extension ladder J. a 15 lb. CO2 fire extinguisher K. a 20 lb. dry chemical fire extinguisher L. an electric smoke ejector M. a pair of bolt cutters.

28-02.03 The firefighter shall demonstrate the technique of inspection, cleaning, maintaining, storage, safety procedures, and reasons for placing a rope out of service.

ADVANCED - 6 Hours

28-03.01 The firefighter, when given a simulated fire fighting or rescue task, shall select the appropriate size, strength and length of rope as follows: A. The firefighter shall tie a double loop figure eight on a bight and place it on a victim (the life basket).

28-03.02 The firefighter shall use a rope to tie ladders, hose, and other equipment so as to secure them to immovable objects as follows: A. secure a ladder tip to a building, B. secure a 1 1/2 inch or larger charged line to a ladder C. secure a hose roller.

28-03.03 The firefighter shall select and tie a rope between two objects at least 15 ft. (4.6m) apart, which will support the weight of a firefighter on the rope.

Section 29
PORTABLE EXTINGUISHERS - 8 HOURS
BASIC - 2 Hours

29-01.01 The firefighter shall identify the classification of types of fires as they relate to the use of portable extinguishers as follows: A. Identify the four (4) classes of fire: 1. Class “A” 2. Class “B” 3. Class “C” 4. Class “D” B. Identify examples of fuels for each class of fire: 1. Class “A” 2. Class “B” 3. Class “C” 4. Class “D”.

29-01.02 The firefighter, given a group of differing extinguishers, shall identify the appropriate extinguishers for each class of fire as follows: A. Class A fire: 1. pump tank water extinguisher 2. stored-pressure water 3. foam 4. dry chemical (multi-purpose agent)
B. Class B fire: 1. dry chemical (ordinary base) 2. dry chemical (multi-purpose) 3. CO2 (carbon dioxide) 4. foam 5. Halon 1211 C. Class C fire: 1. dry chemical (ordinary base) 2. dry chemical (multi-purpose) 3. CO2 (carbon dioxide) 4. Halon 1211 D. Class D fire: 1. powder extinguishing agents for metal fires.

29-01.03 The firefighter shall identify the portable fire extinguisher rating system (Underwriters Laboratories, Inc.): A. the basic symbols for the classes of fires,B. the picture-symbol labeling system for the selection of fire extinguishers, C. the numerical rating system for Class A & B fire

extinguishers, D. the test procedure for rating Class C portable extinguishers, E. the test procedure for rating Class D portable extinguishers, F. portable extinguishers suitable for more than one class of fire.

INTERMEDIATE - 2 Hours

29-02.01 The firefighter shall demonstrate the use of portable extinguishers for each class of fire as follows: A. extinguish a class A fire using a pump tank water extinguisher B. extinguish a class B fire using a dry chemical extinguisher C. extinguish a class B fire using a CO2 extinguisher.

ADVANCED - 4 Hours

29-03.01 The firefighter shall identify and explain the extinguishing effect needed for each class of fire as follows: A. Class A fire: 1. cooling 2. smothering B. Class B fire: 1. smothering 2. blanketing C. Class C fire: 1. smothering & non-conductive D. Class D fire: 1. must be non-reactive with burning material.

29-03.02 The firefighter shall identify and explain fire extinguisher characteristics and operations of: A. Pump tank water extinguishers, stored-pressure water extinguishers, aqueous film forming foam extinguishers, Halon 1211 extinguishers, carbon dioxide extinguishers, dry chemical extinguishers (ordinary base agent), and dry chemical extinguishers (multi-purpose base) as to their: 1. size 2. applicable to what class of fires 3. stream reach under normal conditions 4. discharge time under normal conditions 5. protection from freezing 6. methods of operation.

Section 30
BUILDING CONSTRUCTION – 12 HOURS
BASIC – 0
INTERMEDIATE – 0
ADVANCED – 12 Hours

30-03.01 The firefighter shall describe the relationship of building construction to fire behavior by: A. identifying the types of loads placed on a structure B. identifying loads as to the direction in which they are placed on structural members C. describing the effect of loads on various materials D. identifying terms associated with building construction.

30-03.02 The firefighter shall identify the various types of building construction characteristics: A. wood B. ordinary C. steel D. fire resistive E. heavy timber F. non-combustible.

30-03.03 The firefighter shall describe the various structural elements in building construction by: A. defining fire resistance, B. identifying foundation assemblies, foundation walls, floor assemblies, ceilings and ceiling assemblies, various types of wall construction, roof types, roof coverings, roof

supports, and C. identifying potential hidden spaces in structural elements that would allow for communication of fire and smoke.

30-03.04 The firefighter shall identify the various building services for: A. movement of people throughout a structure; elevators and stairways, B. mechanical operations of a building; heating, ventilating and air conditioning systems, utility chases and vertical shafts, and C. emergency accessibility in buildings; windowless walls, access panels, roof hatches, smoke and heat vents, and skylights.

30-03.05 The firefighter shall identify door and window assemblies by: A. various typesB. describing fire doors and their method of operation C. identifying typical types of door construction D. identifying various window assemblies E. identifying types of windows.

30-03.06 The firefighter shall identify signs of potential collapse of a structure: A. cracks in walls B. sagging roof C. walls out of line.

30-03.07 The firefighter shall identify causes of potential collapse in buildings: A. deterioration B. forces associated with the violence of a fire C. structural modifications found during prefire planning.

30-03.08 The firefighter shall describe at least three (3) hazards associated with light-weight truss construction.

30-03.09 The firefighter shall describe the effects of fire and fire suppression activities on the following building materials: A. wood B. masonry, i.e. brick, block, stone C. cast iron D. steel E. reinforced concrete F. gypsum wall board G. glass H. plaster on lathe.

30-03.10 The firefighter shall define the following terms as they relate to building construction: A. veneer wall (exterior) D. partition wall B. party wall E. cantilever or unsupported wall C. fire wall F. load bearing.

Section 31
PUBLIC FIRE EDUCATION – 8 HOURS
BASIC – 2 Hours

31-01.01 The firefighter shall identify five (5) common causes of fire and their prevention.

31-01.0 The firefighter shall define the importance of public fire education and inspection programs as they relate to the fire department public relations and to the community.

31-01.03 The firefighter shall identify procedures for conducting a fire station tour.

31-01.04 The firefighter shall identify the “Stop, Drop and Roll” technique for extinguishing clothing fires.

INTERMEDIATE – 3 Hours

31-02.01 The firefighter shall identify and demonstrate inspection procedures for private dwellings.

31-02.02 The firefighter shall identify and demonstrate the proper placement, testing and maintenance of smoke detectors in private dwellings.

31-02.03 The firefighter shall identify the elements of a home fire escape plan.

ADVANCED – 3 Hours

31-03.01 The firefighter shall demonstrate procedures for conducting a fire station tour.

31-03.02 The firefighter shall demonstrate the “Stop, Drop and Roll” technique for extinguishing clothing fires.