Assignment # 1
Read and study Unit One of the manual. Answer questions below.

1. Define the following and give an example of each:
   (a) a cell
   (b) a tissue
   (c) an organ

2. Draw a leg
   (a) draw the three planes of the body through it and name them
   (b) mark its proximal and distal ends

3. Draw a foot with the big toe:
   (a) in anatomical position
   (b) in varus
   (c) in valgus (all on the same drawing)

4. Classify these bones:
   (a) patella
   (b) femur
   (c) tibia

5. Name the long bones of the:
   (a) the arm
   (b) the leg

6. Classify the tibio-fibular joints (the joints between the tibia and fibula in the leg).

7. Define the "origin" of a muscle.

8. Describe the differences (in terms of structure and function) between skeletal and smooth muscle tissue.

9. Describe the differences between compact and cancellous bone.
10. (a) List the organic and inorganic elements of bone tissue.
   
   (b) Describe the function of the Haversian canal.

   (c) Name the cells found in the lacunae and describe their function.

11. (a) What is the function of the epiphyseal plate?
   
   (b) Describe what happens if the epiphyseal plate is damaged.

12. List the functions of synovial fluid.

13. What is the consequence of deep cartilage injury?

14. What is the main function of a meniscus?

15. (a) What is osteoarthritis?
   
   (b) What are the important factors which contribute to arthritis?

Assignment #2

Read & Study Unit 2 of the manual, Regional Anatomy

1. Explain in your own words (less than 200 words please) the process of bone growth & development. Try to use one other source besides your manual.

2. Study Unit 1 again.

3. Make a list of as many fractures of the fingers and hands you can. Give their common names and define them.

Assignment #3

Study Unit #3 of the manual. Answer questions below

1. (a) Compare and contrast the features of acute and chronic diseases.
   (b) Give an example of a joint condition for each type of disease in (a).

2. Define a self limiting disease.

3. Describe three simple ways in which a doctor may treat arthritis without surgery.

4 Define: (a) arthrodesis (b) osteotomy (c) arthroplasty.
5. What is the aim of an osteotomy?

6. Describe two limitations of artificial joints.

7. Compare and contrast:
   (a) The bony stability in the knee and hip joints
   (b) The ligament balance in knee and hip replacements

8. List the early and the late complications which can occur after joint replacement.

9. What is the role of surgery in rheumatoid arthritis?

10. Draw three common patterns of meniscal tears.

11. What are the long-term dangers of total meniscectomy?

12. Summarize in 100 words the features required in an artificial joint.

Assignment #4

Read Unit#2, Other Orthopedic Conditions. Answer questions below.

1. What are the spondylitides?

2. Name three types of back disorders related to the spondylitides.

3. What is the cause of sciatica?

4. Describe two possible causes of mechanical backache.

5. (a) Define the following:
   spondylosis
   spondylolysis
   spondylolisthesis

   (b) Describe the simple treatment of spondylosis.

6. Describe the process of disc prolapse.

7. Describe three stages leading to bony root entrapment.
8. Describe, briefly, four common abnormalities of posture in childhood indicating:
   (a) etiology
   (b) natural history
   (c) treatment

9. If a dislocated hip is not diagnosed at birth, what is the critical stage of development of the hip after which it may not be returned to normal?

10. Describe the three stages of management of club foot.

11. Define spina bifida cystica and spina bifida occulta.

12. Define Perthe’s disease and state the age at which it is most common.

Assignment #5

Read Unit #3 Trauma

1. When a clinician is examining an injured person who is suspected of having a fracture, what is meant by the following terms:
   (a) Deformity?
   (b) Tenderness?
   (c) Crepitus?

2. Name five investigative techniques used to assist in diagnosing a fracture.

3. You are told a man has fractured his tibia - what information do you require to fully describe this injury?

4. What is the significance of the comminution of a fracture? (What does it mean, and how does this affect treatment of the fracture?)

5. (a) By what mechanism does a spiral fracture occur?
   (b) What are two common causes of pathological fractures?

6. Describe four ways of holding fractures (one sentence for each).

7. Name a device which can be used to achieve interfragmentary compression.

8. Give two reasons why implants used for internal fixation of a fracture may be removed.

9. List the primary, late complications of fractures.
10. Describe a low energy injury and give 3 examples
    Describe a high energy injury and give 3 examples

11. A patient comes in for a post-op visit after having an external fixator applied 2-3 week ago for a tibia fracture. Describe how you would prepare the patient before the physician sees the patient. What would you check for?

Assignment #6

1. Choose one day and make a log of proceedings in your plaster room. List the casts you have applied, along with any special circumstances.
   If you have had a complication during the day write a short description of it and how you dealt with it.
   If not, list the potential complications you recognize might have occurred, and describe the actions you would take to prevent them.

2. A patient collapses complaining of chest pain but then appears to have a fit. Describe:
   (a) what the possible causes might be
   (b) how you would manage that patient
   (c) what help you would summon
   (d) what documentation might be required afterwards

Students from the same office must choose different days for this assignment.

Assignment #7

Read and learn the first & second section in Practical Fracture Treatment and then answer these questions.

1. Define, in your own words, a fracture.

2. Describe
   a. open fracture
   b. closed fracture
   c. dislocation
   d. subluxation
   e. sprain
3. Define and give an example of
   a. fatigue fracture
   b. pathological fracture

4. In 150 words or less, explain a greenstick fracture and its treatment.

5. How many fragments are in a comminuted fracture?

6. Stiffness, a common complication of fractures can be minimized by _____________

7. Name three common complications of fracture dislocations.

8. If the fracture process causes additional injury to accompanying structures, it is said to be a _______________ fracture.

9. Two common sites of compression fractures are _______________ and _______________

10. T or F Significant angulation in fractures must always be corrected.

11. Give two reasons why angulation should be corrected.

12. Describe “axial rotation deformity” in fractures.

13. Name two types of epiphyses.

14. Describe, in your own words, type 1 through type 5 epiphyseal plate injuries.

15. Primary callus responses remain active for how long?

16. T or F With internal fixation, healing occurs slowly and external bridging callus may not be seen.

17. What does “AO” stand for?

18. Name six radiographic studies that might be done in your office to visualize a fracture?

19. From page 30, list some common diagnostic pitfalls.

20. What are the prime aims of fracture treatment?

21. What does A B C D E (F) stand for in the initial treatment of trauma?

22. What is the most common method of fracture treatment (reduction)?

23. Name four types of fracture support.

24. How does an open fracture influence treatment?
25. Name five factors that might alert you to child abuse?

**Assignment #8**

Practical Fracture Treatment, Section A, Chapter 4 Answer these questions

1. Forces applied in a closed reduction to correct the fracture deformity is usually applied in
   a. the direction of the long axis of the bone.
   b. a joint above the fracture site.
   c. a joint below the fracture site.
   d. the opposite direction of the force that caused the fracture.

2. The first step in most closed reductions is to apply
   a. a cast
   b. cold therapy
   c. traction
   d. a force opposite that caused the fracture.

3. Applying traction to a fracture during closed reduction will lead to
   a. vascular compromise
   b. increased swelling
   c. impaction of bone ends
   d. disimpaction of bone ends

4. T or F To correct residual angulation of long bones after traction has been applied, the physician may apply pressure under the fracture with the heel of their hand while applying pressure proximally with the other hand.

5. T or F Some fractures require a force to increase the angulation of the fracture to unlock the fragment before a reduction can be achieved.

6. The purpose of stockinette is to
   a. protect the skin
   b. helps the conduction of perspiration away from the skin
   c. removes any roughness caused by the ends of the cast
   d. all of the above

7. T or F There are some times you do not use stockinette to cover a limb you are casting.

8. When using a plaster slab to support a fracture you should always
   a. use hot water
   b. press the layers firmly together to reduce air pockets within the slab.
   c. encircle the entire limb
   d. use an elastic bandage to wrap the slab and limb

9. T or F Plaster slabs can be reinforced using a “girder”.
10. If a patient calls the office complaining of localized or general pain two days after a short leg cast is applied for a non-displaced fracture of the distal fibula you should  
   a. increase pain meds.  
   b. ask the patient to elevate the limb  
   c. ask the patient to apply cold therapy to the ankle  
   d. have the patient come back to the office immediately

11. T or F A short arm cast applied for a distal radius fracture should allow the patient to flex their MCP joint to 90 degrees.

12. Persistent ________________ and ________________ is suggestive of incomplete union.

13. Name two disadvantages of polymer resin casts.

Assignment #9
Read Chapter 4 in Practical Fracture Treatment and answer these questions

1. The fracture type that has the highest amputation rate due to vascular difficulties or infection is  
   a. Type IIIc  
   b. Type III  
   c. Type II  
   d. Degloving injury

2. One metal that is not used in skeletal implants is  
   a. Stainless steel  
   b. Alloys of chromium, cobalt and molybdenum  
   c. Titanium  
   d. aluminum

3. Disturbance of a fracture hematoma may  
   a. Delay or prevent union  
   b. Will speed healing  
   c. Have no effect on fracture healing  
   d. will cause an infection

4. Cortical bone screws used to draw bone fragments together (lag screw principle) should be inserted  
   a. at a 45 degree angle to the fracture  
   b. at a 90 degree to the fracture  
   c. Parallel to the bone fragments  
   d. 60 degrees to the bone fragment
5. In fractures of the femur, tibia and humerus, the ideal number of cortices engaged is
   a. 3
   b. 6
   c. 8
   d. 5

6. Intramedullary nails are used to treat
   a. Diaphyseal fractures
   b. Type II epiphyseal fractures
   c. Type III epiphyseal fractures
   d. Skull fractures

7. Explain how dynamic compression works.

8. T or F Tension band wiring is used more frequently in olecranon & patella fractures.

9. T or F As a general rule, when there is extensive skin and soft tissue loss and the wound has been badly contaminated, internal fixation should be avoided.

10. High velocity gunshot wounds are characterized by a small entry and ___________________ exit wounds.

Assignment #10
Read and study Chapter 5 of Practical Fracture Treatment

1. Name ten factors that affect the rate of healing of a fracture.
2. Name nine complications of prolonged recumbency.
3. Name eight complications peculiar to fractures.
4. Define delayed union of a fracture.
5. Name and define three cases of intra-articular stiffness.
6. Name ten basic principles to follow to avoid stiffness.
7. In your own words, define avascular necrosis.
8. Define myositis ossificans
9. Define Osteomyelitis
10. Name seven common clinical findings of compartment syndrome.
11. What is a “delayed tendon rupture”?
12. Explain mechanical and corrosion complications of implants.
Assignment #11
Read and learn chapter 6 of Practical Fracture Treatment.

1. For patients under thirty years of age the most common cause of a clavicle fracture
   a. Pathological
   b. Gunshot wound
   c. Traffic accident
   d. Sporting injuries
   e. C & D

2. True or False  The most important aspect of treatment of clavicle fracture is to
   provide support for the weight of the arm which has lost its clavicular tie.

3. True or False  Although commercially available clavicular supports work well on
   younger patients, elderly patients may not always tolerate clavicular bracing and may only need sling support.

4. True or False  In an outer 1/3 clavicle fracture, clavicular bracing is valueless and a sling is usually adequate.

5. Anterior dislocation of the shoulder is usually the result of a
   a. work related accident
   b. a fall with an outstretched hand
   c. pathological influences
   d. diving accident

6. In 200 words or less, describe Kocher's method for treatment of anterior dislocation of the shoulder.

7. Name three alternative methods for reduction of anterior dislocation of the shoulder

8. Describe the differences in the mechanism of injury between anterior and posterior dislocation of the shoulder.

9. In a fracture of the humeral shaft (mid-third) the proximal fragment tends to be abducted due to the ________________.

10. In a fracture of the humeral shaft (upper one-third) the proximal fragment tends to be pulled into adduction by the ________________.

11. Describe the “hanging cast”. What Donjoy orthopedic support can take the place of a hanging cast?

12. What would follow a hanging cast in the normal course of treatment of a fractures humerus?

13. Name five complications of humeral fractures.
Assignment #12
Read Chapter 7 of Practical Fracture Treatment

1. A supracondylar fracture of the humerus is a fracture which occurs in the
   a. head of the humerus
   b. midshaft of the humerus
   c. distal third of the humerus
   d. greater trochanter

2. The incidence of supracondylar fractures are the greatest in
   a. adults over 40
   b. adults under 40
   c. teenagers
   d. children age eight

3. Describe supracondylar fractures in terms of increasing violence. (see page 146)

4. Describe possible vascular complications in supracondylar fractures.

5. Name and describe the classifications of supracondylar fractures. See if you
can name the classification of a recent supracondylar fracture you might have
had in your practice. Check your answer with your Doctor.

6. Describe types of fixation that can be used for supracondylar fractures.

7. If after external fixation of a supracondylar fracture, no pulse is observed, what
is the first step you should take?

8. True or False    The ability to grip a sheet of paper between the ring finger and
the fifth finger is a good test for ulna nerve function.

9. Name and describe three types of coronoid fractures.

10. Describe the mechanism of injury of a radial head fracture.

11. Describe the treatment of a type 1 fracture of the radial head.

Assignment #13
Read Chapter 8, Practical Fracture Treatment.

1. The radius and ulnar are bound together by
   a. annular ligament
   b. the interosseous membrane
   c. the radio-ulnar ligaments and triangular fibro-cartilage
   d. all of the above
2. In children’s green stick fractures, any intact periosteum on the original concave surface of the fracture exerts a constant springy force which
   a. will help heal the fracture
   b. will delay healing
   c. may cause recurrence of the angulation if the cast immobilization slips
   d. have no effect.

3. Explain how muscle wasting can cause fracture slippage. What can be the result of fracture slippage inside a cast?

4. Explain axial rotation in radial fractures. How do you diagnose an axial rotation in the radius? (see page 175)

5. Explain why a broad arm sling is important in forearm fractures.

6. What is the maximum degree of angulation of a radius fracture in younger children that will correct with remodelling.

7. True or False The best treatment for displaced fractures of the forearm bones in a healthy adult is open reduction and internal fixation.

8. T or F Sometimes it is necessary to increase the fracture deformity by applying traction before reducing the fracture and immobilization.

9. To reduce the risk of ischaemia, a back shell splint can be applied to a forearm fracture.

10. What is the mechanism of injury of a Monteggia Fracture-Dislocation

11. Define a Galeazzi Fracture-Dislocation

12. Give three signs that may indicate a forearm compartment syndrome.

**Assignment #14**
Read Chapter 9 of Practical Fracture Treatment and answer these questions

The most common fracture is the
   a. fracture of the distal fibula
   b. fracture of the 5th metatarsal
   c. fracture of the scaphoid
   d. Colles fracture of the wrist

2. Describe and define a Colles fracture
3. The altered contour of the wrist in a badly displaced Colles fracture is referred to as a 
   a. dinner fork deformity  
   b. tuning fork deformity  
   c. switch blade deformity  
   d. spoon deformity  

4. In a normal wrist the radial styloid lies 
   a. 1 cm distal to the ulna  
   b. 2 cm distal to the ulna  
   c. on the same plane as the ulna  
   d. 1 cm proximal to the ulna  

5. A Colles fracture is generally caused by a fall on 
   a. a bent elbow  
   b. a sofa bed  
   c. a knee  
   d. a out-stretched hand  

True or False 

6. A greater degree of deformity may be accepted in a very old frail patient. 

7. A distal radius fracture should be reduced if, in the lateral projection, the joint line is tilted 10 degrees or more posteriorly. 

8. The Colles fracture patient should be allowed to flex the elbow beyond 90 degrees. 

9. In 200 words or less, describe the reduction technique for a Colles fracture. Include the application of immobilization techniques. 

10. After Colles fracture reduction & immobilization, the patient should be seen 24 hours later to check for 1.__________ 2.__________ 3.__________ & 4.__________  

11. Describe two positional error in Colles fracture immobilization.  

12. Describe five casting faults in Colles fractures.  

13. What is the normal of range of motion of supination and pronation in wrist movement. 

14. Describe a Smith’s fracture. 

15. Name five types of scaphoid fractures using the Herbert classification. 

16. True or False  Late diagnosed non-union of the scaphoid may still be effectively treated by a cast and pulsed electrical stimulation if there is no displacement.
17. What are the general principals in assessing injuries to the metacarpals.

18. In a lateral projection, what is the maximum angulation that is acceptable in the metaphysis and in the neck of the fifth metacarpal.

Assignment #15
Read Chapter 10 of Practical Fracture Treatment and answer these questions.

1. Name the eight anatomical structures that bind the vertebrae together.

2. The MAIN concern in any spinal injury is_______________________.

3. Describe a simple vertebral compression fracture.

4. Define proprioception.

5. Initial management of a cervical spine injury should control ________________.

6. Describe the location Halo pin sites.

7. Describe the mechanism of injury in a burst fracture of the cervical spine.

8. The best radiographic view for odontoid fractures is the _________________.

9. Describe a Grade II whiplash injury.

10. Give three possible causes of fractures of the Thoracic and Lumbar spine.

11. True or False The flexion compression wedge fracture is the most spine fracture.

12. T or F Multiple wedging fractures in the thoracic spine will lead to increase lordosis in the lumbar spine.

13. Anterior wedging of 20 degrees or more points to damage of ________________

14. A Stryker frame is used for___________________________.

15. Name some ways you might treat a newly paraplegic patient in your office that might be different than your regular low back pain patient. What type of skin problems would you look for?
Assignment #16
Read Chapter 10, Pages 261 to 279, Practical Fracture Treatment and answer these questions.

1. The two wings of the pelvis are joined to the sacrum by
   a. two layers of muscle
   b. a bony bridge
   c. very strong sacroiliac ligaments
   d. two tendons

2. The arrangement between the wings of the pelvis and the sacrum are said to be from a
   a. triangle
   b. square
   c. ring
   d. pentagon

3. Fractures of the pelvis in the region of the symphysis and pelvic rami are often associated with damage to the _________________.

4. The most common fracture of the pelvic rami is
   a. sacral fracture
   b. coccyx fracture
   c. superior pubic rami fracture
   d. superior iliac crest fracture

5. One imaging examination that will show anterior widening of the sacroiliac joints is
   a. CT scan of the pelvis
   b. ultrasound of the pelvis
   c. blood test
   d. thermoscan

6. Name thirteen possible complications of pelvic fractures and give a short summary of their treatments.

Assignment #17
Read Chapter 11, pages 280-305 of Practical Fracture Treatment and answer these questions.

1. A hip may be dislocated as a result of a force applied
   a. up the femoral shaft
   b. down the femoral shaft
   c. across the pelvis
   d. all of the above

2. Name three orthopedic injuries that can occur during a car accident when the person sitting in the front passenger seat hits the dashboard with their knee.

4. Name 13 complications that can occur with a dislocated hip.

5. Describe avascular necrosis of the hip and types of treatment.


7. Name five ways to prevent a hip fracture.

8. Describe a Garden type 2 hip fracture.

**Assignment #18**

Chapter 12, Pages 307-343 and answer these questions.

1. Name five causes of femur fractures.

2. Name the five parts of the femur according to the AO Classification System. Include a faxed drawing.

3. What is the most important decision in selecting a Thomas Splint.

4. Why should Gallows traction not be used in older children?

5. Name nine complications of fractures of the femur. Give a brief explanation of each complication.

6. Describe conservative treatment for a vertical patellar fracture.

7. Describe the treatment of a rupture of a quadriceps tendon.

8. Describe the treatment for an isolated tear of the medial ligament of the knee.

9. Describe as many problems as you can with cylinder casts. How would you correct these problems.

10. Research the “Quad Mold” casting technique. Describe the molding process.

**Assignment #19**

Read Practical Fracture Treatment, Chapter 13, Pages 346-362 and answer these questions.

1. In upper tibial fracture, the ____________ artery is susceptible to damage and may cause ____________________ ischaemia of the calf.
2. A sandbag (or a firm foam pillow) can be used under the __________________ for support and positioning during reduction and cast application of tibial fractures.

3. True or False   Wedging a cast to further reduce angulation in a fracture should be done distal to the fracture site.

4. In later stages of a healing tibial fracture, a _____________may be used if stability is not a problem.

5. In 200 words or less describe the diagnosis and treatment of compartment syndrome.

**Assignment #20**
Read Practical Fracture Treatment, Chapter 14, Pages 363-388 and answer these questions.

1. Through the vertical axis, the ankle can rotate
   a. 45 degrees
   b. 18 degrees
   c. 30 degrees
   d. 60 degrees

2. The deltoid ligament of the ankle
   a. holds the fibula and the tibia together
   b. holds the talus on the medial side within the ankle mortise.
   c. holds the calcaneus to the fibula
   d. holds the talus on the lateral side within the ankle mortise.

3. Describe the movement of the ankle in a SL injury .

4. Describe the movement of the ankle in a PD injury.

5. Name three signs you look for first in diagnosing an ankle injury.

6. Describe a Type 1.3 ankle fracture under the AO-Weber classification.

7. True or False    Fractures of the fibula above the syndesmosis may require a long leg cast.

**Assignment #21**
Read Practical Fracture Treatment, Chapter 15, Pages 389-418 and answer these questions.

1. True or False   Type 1 injuries of the foot require a foot platform

2. Describe one mechanism of injury for a calcaneus fracture.

3. What radiographic views would you order for a possible calcaneus fracture.
4. A patient has a vertical fracture of the calcaneal tuberosity. Can the patient be weight bearing?

5. Describe possible mechanisms of injury for rupture of the “tendocalcaneus”.

6. What is the most common fracture of the lower limb?

7. Describe a Jones fracture and its treatment. How is it different from the fracture in question 6?