Name:________________________________________

This exam is closed book, closed notes. There are 6 sections/questions.

Grade:

#1 _______/ 20
#2 _______/ 12
#3 _______/ 24
#4 _______/ 14
#5 _______/ 22
#6 _______/ 8

Final Grade __________/ 100
Name:___________________________________

1. Complete the crossword puzzle using the clues. Each answer is worth 2 pt. **Total 20 pts**

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Across
2. Viral disease of the spinal cord (polio)
8. Gel-like center of the intervertebral disc (nucleus pulposus)
9. Second lowest region of the spine, often known as the 'lower back' (lumbar)
10. One of the 3 grips used in robotic prosthetic hands (tripod)

Down
1. A material that can be shaped when it is heated and strengthens when cooled (thermoplastic)
3. Narrowing of the spinal canal (stenosis)
4. Shoulder joint known mainly as this joint (glenohumeral)
5. Socket of the shoulder joint formed by acromion (glenoid fossa)
6. Condition of the skin seen with prosthetic wear (dermatitis)
7. Dislocation where the humerus is partially out of the glenoid (subluxation)

Total 20 pts
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2. Label the parts of the vertebra. **12 pts**
3. Analyze the following images.

(a) Name the ligaments that the letters A, B, C, and D are pointing to. 8 pts

(b) What injury is depicted in this x-ray? What are the causes, possible side effect, and treatment? 4 pts

Compression fracture. This is usually caused by osteoporosis or a large load. A possible side effect is stenosis and pinching of the nerves that come out of the intervertebral foramen. The treatment can be bracing or injection of bone cement into the vertebral body.
(c) Draw the components of the intervertebral disc and describe their functions. Name two diseases or injuries of the intervertebral disc. What is a possible treatment when one has issues with the intervertebral discs? **6 pts**

(d) Name the muscles labeled A, B, and C? **6 pts**
4. Label the ligaments and structures of the shoulder depicted in the figures. 14 points
5. (a) Name the muscles at A, B, C, and D. 8 pts

(b) What injury is depicted in this MRI? What are possible causes and what is a treatment option? 6 pts
(c) Name and describe four (4) diseases of the shoulder. **8 pts**
6. The field of prosthetics has advanced with each major war. It is an interesting field because of the highly customized nature of the products. There is also a psychological component. Generally describe the process of getting a prosthetic, some issues to consider when fitting and wearing a prosthetic. What are some of the advances in prosthetics and the cons of these advances? **8 pts**