

Student: _____

Date: _____

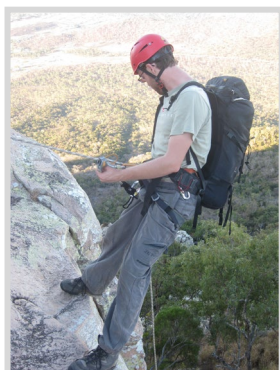
VERTICAL MOBILITY (self-rescue) SKILLS DIAGNOSTIC EXAM**Time limit = 1 hour**

This exam is designed to identify any gaps that may exist in your knowledge. Missed exam questions may indicate that you require specific refresher training. Poor performance indicates that you are not yet ready to gain a qualification. Each missed exam question must be thoroughly reviewed until competency is achieved.

Carefully read each question then choose the most correct answer. This exam must be completed without assistance or access to reference material.

Competency can be demonstrated by initially scoring 100%.

- Q1. You are faced with having to perform an abseil descent with a very heavy backpack. Choose the photo you think indicates the safest technique.

☐ A

Leave it on your back and descend normally

☐ B

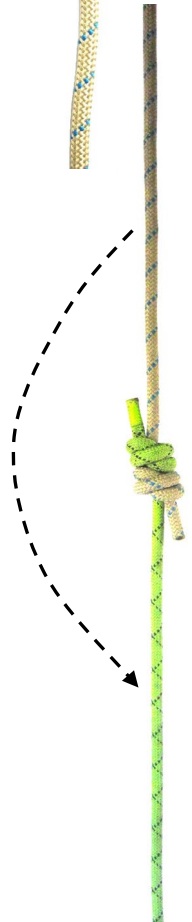
Suspend the pack from your descending system

- Q2. What is the correct (optimal) way to suspend a pack from your descending system? Choose the image you believe is most correct.

☐ A☐ B☐ C

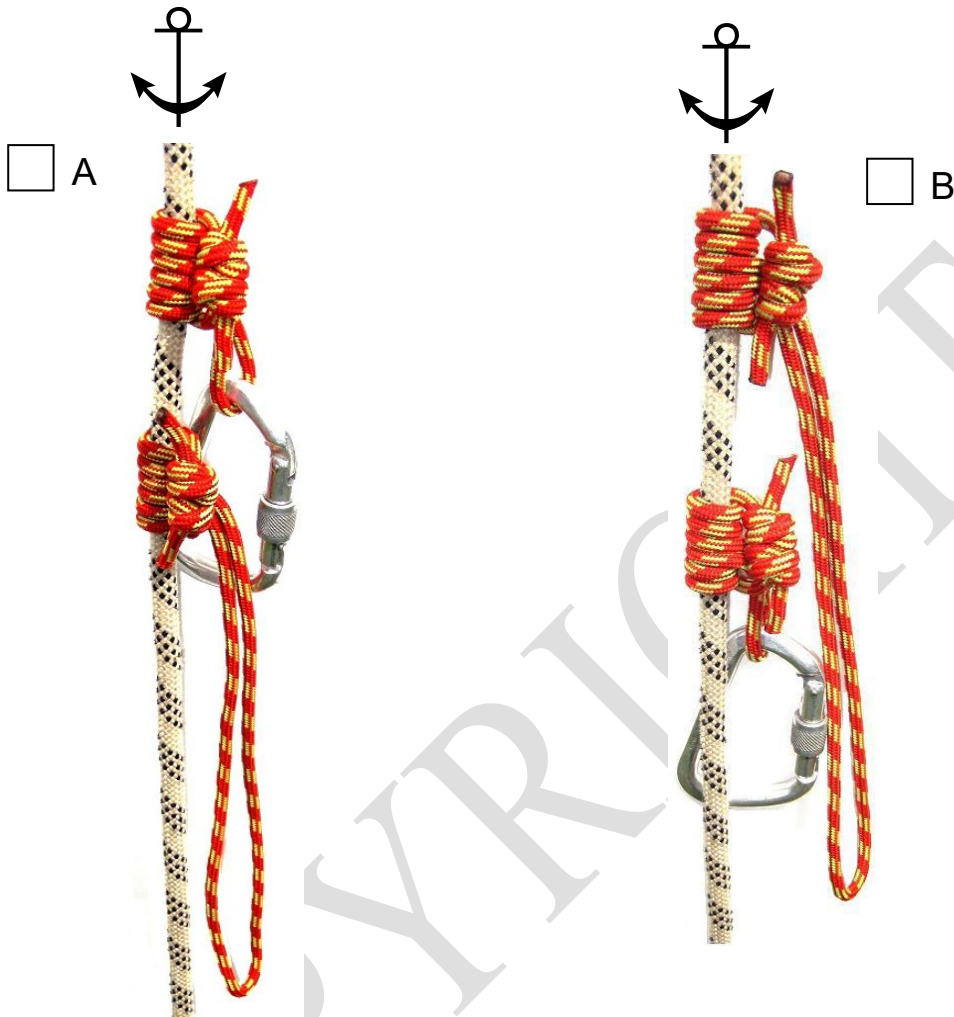
Explain your answer:

- Q3. You are preparing to perform an abseil descent. There is a fixed joining knot – and you have to perform a knot bypass. There are no ledges to stand on to support your weight while performing the bypass. Choose the configuration you believe will be most effective/efficient for performing a knot bypass procedure. Explain your answer.

☐ A☐ B☐ C☐ D☐ E

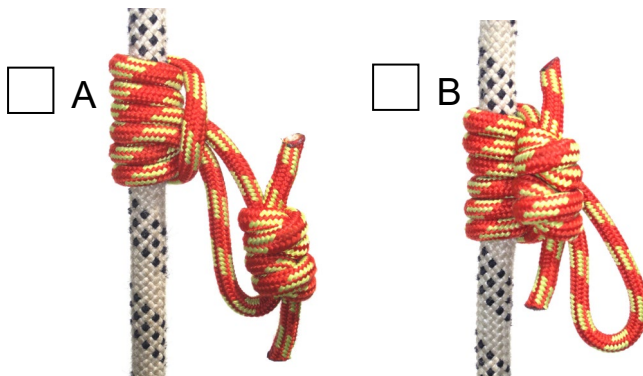
Explain your answer:

- Q4. You are planning to ascend a fixed rope using slide and grip hitches. You only have enough gear to configure two (2) hitches – one long and one short. Choose the configuration you believe will be most efficient for ascending the fixed rope. Explain your answer.



Explain your answer:

- Q5. Which configuration of the Prusik hitch is optimal (most effective) for ascending a fixed rope? Explain your answer.



Explanation:

- Q6. Study the images carefully. Which of these single rope configurations will provide the highest friction and brake control while descending? Indicate your answer. Explain.

☐ A☐ B☐ C

Explain:

- Q7. Study the images carefully. Which of these double rope configurations will provide the highest friction and brake control while descending? Indicate your answer. Explain.

☐ A☐ B☐ C

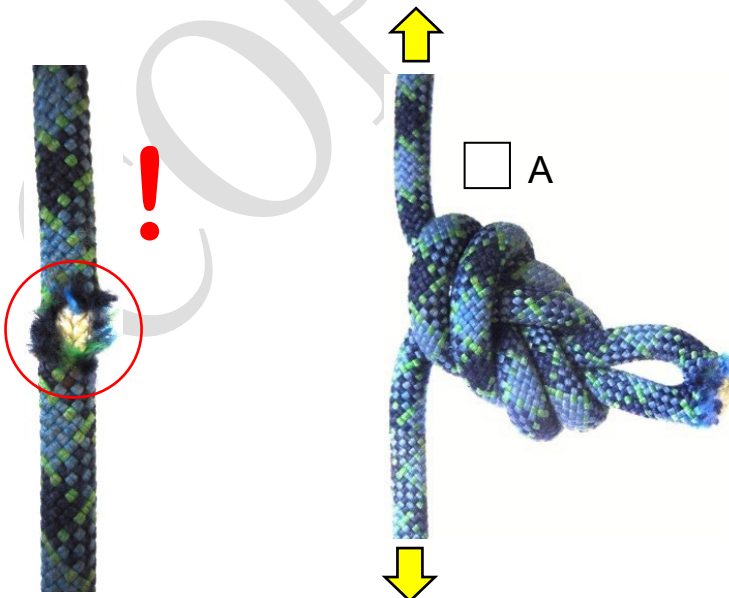
Explain:

- Q8. Study the images carefully. Choose the images you believe is correct configuration for increasing friction using a 'crossed carabiner'. Explain your answer.

☐ A☐ B☐ C

Explain your answer:

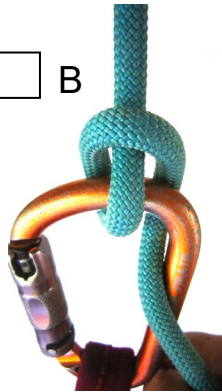
- Q9. You find your rope damaged – but need to perform an abseil descent. You decide to tie a knot to isolate the damaged section of rope (knot bypass during descent). Choose the knot you believe is most correct.

☐ A☐ B

Explain: (include the name of the knot you chose)

- Q10. Study the images carefully. Which configuration will provide the most friction (brake power)? What is the name of this particular knot/hitch? Explain your answer.

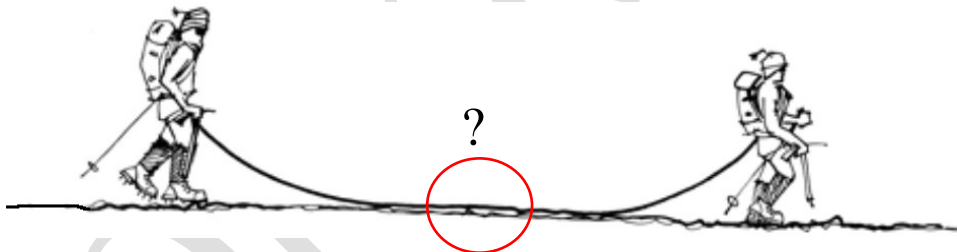
☐ A

☐ B

☐ C


Explain your answer:

- Q11. What is the most effective (and secure) way to attach a 3rd climber to the middle of the rope? Choose the knot you believe is most effective (and is stable and secure) for tying-in to the middle of a rope.

Note: The image below is for reference purposes – and shows 2 mountaineers walking across snow/ice. The image is illustrating that a person attempting to attach to a midpoint of a rope has no access to either end. That is, there will be no ‘ends’ or ‘tails’ to work with.


☐ A


Butterfly

☐ B


Inline
Figure 8

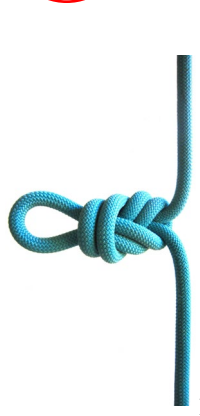
☐ C


Figure 8

☐ D


Bowline with a
bight

Is it possible to attach without using carabiners?
Explain your answer:

☐ Yes

☐ No



- Q12. Study the photo carefully. You are required to configure an improvised harness so you can perform an abseil descent. Is the system shown in the photo below acceptable? The term *acceptable* in this case refers to risk and means 'as low as reasonably achievable'. Explain your answer.

☐

Yes

☐

No



Explain your answer:

- Q13. You need to stop and go 'hands-free' to resolve an issue while performing an abseil descent. You are abseiling with a Figure 8 descending device. Choose the photo you believe shows the preferred method of tying-off the descending device. Explain your answer.

☐

A

☐

B

☐

C

☐


D



Explain your answer:

Q14. You are required to perform a fixed knot by-pass during an abseil descent. Describe the procedure required to carry out the bypass using the simplest and most efficient method you can think of. List the equipment resources you will require. There are no ledges to stand on.

Describe the procedure: (step by step sequential order)



The diagram shows a rope system for an abseil descent. At the top, an anchor is attached to the rope. Below the anchor, a carabiner is connected to the rope. Further down, a knot is tied in the rope. A curved arrow points from the knot area towards the right, indicating the direction of the procedure. Below the main diagram, there is a smaller diagram showing a rope with a knot and a carabiner, with an arrow pointing to it from the main diagram.

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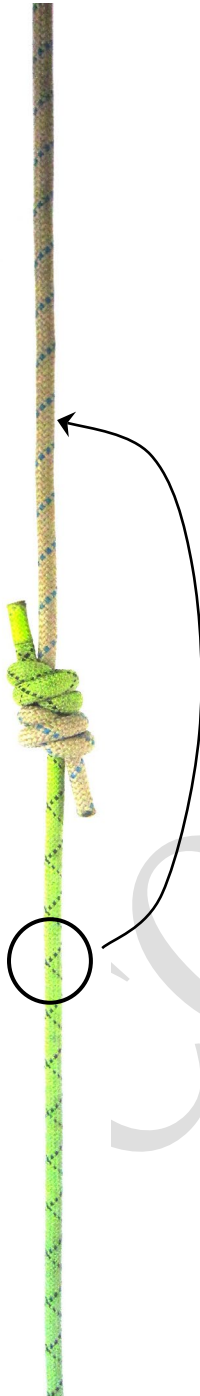
Equipment resources: (what gear do you need to perform the bypass?)

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- Q15. You are required to by-pass a fixed knot while ascending a rope. Describe the procedure required to carry out the bypass and list the equipment resources you will require. Assume that you cannot stand on a ledge to remove your body weight.

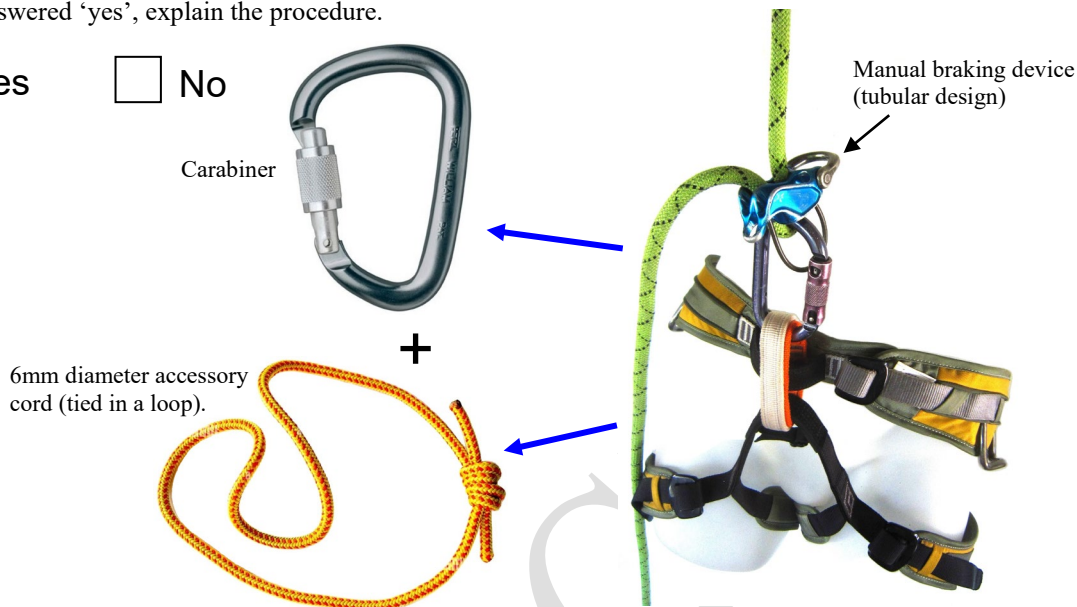
Describe the procedure: (step by step sequential order)

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- Q16. You have commenced an abseil descent only to discover that your rope is too short and does not reach safe ground. You are fully committed, and you are hanging in mid-air (overhanging cliff). You only have the equipment shown in the image below. You do **not** have access to any other equipment. Is it possible to ascend a rope using only the resources indicated? If you answered 'yes', explain the procedure.

☐ Yes

☐ No


Explain:

- Q17. You are getting ready to perform an abseil descent. However, you are not sure if the rope reaches safe ground (you can't visually confirm due to the terrain). If the rope isn't long enough, you will be forced to ascend back up your rope. Choose the photo you believe is showing the optimal system/configuration for this situation. Explain your answer.

☐ A

☐ B

☐ C

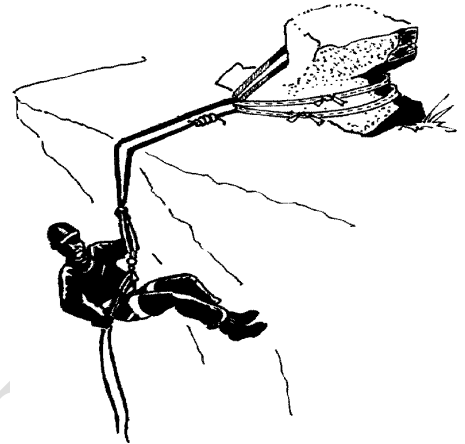
☐ D


Explain:

- Q18. You have performed an abseil descent on a retrievable system – using doubled ropes. At the bottom of the pitch you pull on the ropes to retrieve them but they are stuck. No matter how hard you pull, nothing happens. List at least five (5) possible causes of this predicament. You will be required to discuss your answers.

Note: Each of your answers must be clear and *easily distinguished* from each other.

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- Q19. Study the photo carefully.
You are planning to apply load to the blue rope (left). Your intention is to perform an abseil descent on the blue rope.
Is it possible to load an end-to-end joining knot in this manner? Explain your answer.

☐ Yes☐ No

Explain your answer: (include any risks you think may exist with this procedure)

- Q20. Study the images carefully.
What are the principal advantages of these type of devices when abseiling/rappelling?
What do each of these devices have in common?
Explain your answer.

A

Advantages (A):

B

Advantages (B):

C

Advantages (C):

D

Advantages (D):

What do all of the devices have in common? Explain.

- Q21. Study the photos carefully. You need to descend on a retrievable abseil system but your device will only accept a single rope. There is no possibility of using 2 ropes in the device. Choose the system you think is best suited for performing a descent with a device that can only accept one rope. Explain your answer.

It might be helpful to imagine descending with a 'GriGri' device.



These devices can only accept 1 rope.

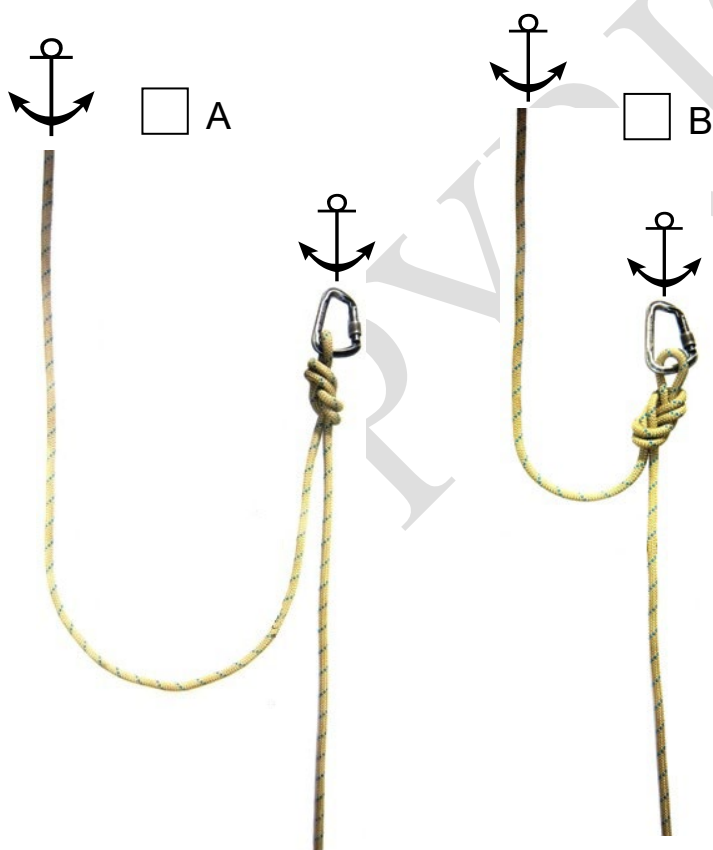


Explain your answer:

- Q22. Study the photos carefully. You are descending a fixed abseil rope which has been re-anchored (re-belayed). Explain the process / steps to transition safely through a re-anchored position (list as many steps as required).

Which photo indicates the correct configuration? Indicate your answer in the space provided.
List the steps required to perform a transition through a re-anchor (in sequential order).

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List the equipment items needed to perform a transition through a re-anchored position.

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- Q23. This question relates to Q22 above.
Under what circumstances would an abseil rope need to be re-anchored? What is the safety advantage of doing this? Explain your answer.

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Final score _____

Trainee statement:

I declare that I completed this exam paper without the assistance of others. My answers represent my own work and not the work of someone else. I realise that I may owe a duty of care to others and that my knowledge and skills may be critical in times of difficulty or in emergencies.

Student signature: _____

Date: _____

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