

## CS F303 Computer Networks Lab Test

15 marks

### Instructions:

1. You have 50 minutes to solve the problem. Before the end of 50 minutes you need to submit your solution on Google Classroom. The submission closes automatically and will not be reopened
  2. After submitting, go to the designated Google Meet link for evaluations (will be circulated during the examination). If you submit before the allotted 50 minutes you can go for evaluations before as well
  3. You need to keep your laptops/desktops ready to be able to run Cisco Packet Tracer and Socket Programming in C
  4. You should be signed in to the designated Google Meet channel and keep your video on and mic muted throughout. Announcement(s) (if any) will be made on these channels only.
  5. The evaluator will run your code. You will also need to answer questions posed to you by the evaluator. Answering the question without proper demonstration will not be awarded any marks.
  6. This is an open book, open material, open Internet exam. You can reuse your old code. If you are referring to material from a public source please include the source as a comment in your submission to avoid plagiarism penalty. You are not allowed to communicate with any other human being (other than proctors and evaluators) during the duration of the examination.
  7. All submissions will be passed through a plagiarism checker post-facto. Plagiarised submissions will attract 0 marks and will be dealt with in accordance with laid down norms of using unfair means during examination.
  8. **Save your .pkt (or cisco packet tracer file) as ID\_section.pkt file. For e.g. 2018A7PS0236H\_P1.pkt. Do not zip your file.**
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### Question

Design a network which will consist of a DNS and DHCP server. Please note that the DHCP and DNS must be enabled on a SINGLE server only. The server is connected to a system through a router. You can use an additional switch to connect your system to the router. The router is directly connected to an http server having a domain name "www.youtube.com". Show that the page "www.youtube.com" gets loaded in the web browser of PC. Figure 1 below shows the required configuration. Using a packet sniffer demonstrate and answer the following questions: (*Hint: use 'ip helper-address' command*)

1. What transport layer port is used to resolve the name of the http server?
2. What underlying transport layer protocol and port number is used to assign an IP address to the PC?
3. How many DHCP packets are exchanged before the PC is assigned an IP address? Give reason.

