185) Internet API is a set of rules that the sending program must follow so that the Internet can deliver the data to the destination program. ✓

186) UDP is used together with IP when small amounts of information are involved, but it uses more system resources than TCP.
Correct: UDP is used together with IP when small amounts of information are involved, but it uses fewer system resources than TCP.

187) When configuring email clients, an Internet address for an SMTP server must be entered. ✓

188) File Transfer Protocol (FTP) provides the transmission in encrypted form to provide security for sensitive data. Correct: File Transfer Protocol (FTP) provides a method for copying files over a network from one computer to another.

189) The Open System Interconnection (OSI) model defines a networking framework to implement protocols in layers, with control passed from one layer to the next. ✓

190) The Transport Layer manages the mapping between these logical addresses and physical addresses. In IP networking, this mapping is accomplished through the Address Resolution Protocol (ARP). Correct: The Network Layer manages the mapping between these logical addresses and physical addresses. In IP networking, this mapping is accomplished through the Resolution Protocol (ARP).

191) The maximum number of IP addresses that can be assigned to hosts on a local subnet that uses the 255.255.255.224 subnet mask is 40. Correct: 255.255.255.224 is a class A/27 and its last 5 bits are zero => provides 8 subnets, each with 30 hosts.

192) The subnetwork address of a host with an IP address of 172.16.66.0/21 is 172.16.64.0. ✓

193) To test the IP stack on your local host, you would ping the IP address 127.0.0.0. Correct: 127.0.0.1

194) A switch does not keep a record of the MAC addresses of the devices connected to it. Correct: A switch keeps a record of the MAC addresses of all the devices connected to it.

205) UDP guarantees datagram delivery.

206) The socket type used by TCP is SOCK_STREAM. ✓

207) With UDP, one party can overflow the other, which results in lost packets. ✓

208) The connect system call is normally called by the client process in order to connect to a server process. ✓

209) The listen system call indicates to the protocol that the client process is ready to accept new incoming connections on the socket.

210) At the level of a TCP client, the bind system call is mandatory.

211) The high order bits of an IP address represent the host part.

212) All the hosts from the same network can physically reach each other without an intervening router. ✓

213) A network address can be determined based on an IP address from the network and the netmask. ✓

214) Always, in a class of addresses, the first and last IP addresses are reserved. ✓

215) For connecting a host with a private address to the internet, it has to be translated to a public address, process named ARP.

216) 172.16.0.0/12 refers to a private address space. ✓

217) A DNS server is responsible with translating numerical IP addresses to domain names.
218) The network address can be obtained from an IP address and the netmask using the logical operation “OR”.
219) When NAT is involved, the local network uses just one IP address as far as outside world is concerned. ✓
220) The number of IP addresses allocated for each subnet block has to be a power of 4.
221) 209.220.186.8/255.255.255.248 is an invalid IP/netmask combination.
222) The default gateway serves as an access point or IP router that a networked computer uses to send information to a computer in the same network or the Internet.
223) A 255.255.255.240 netmask is capable of supporting 16 hosts.
224) A computer uses HTTP to look up domain names and get the associated IP address.
225) There is no routing based on MAC addresses. ✓
226) A proxy server acts as an intermediary for requests from clients seeking resources from other servers. ✓
227) The combination DNS server = default gateway is not possible.
228) A collection of computers (PCs, Workstations) and other devices interconnected represent a computer network. ✓
229) Hosts (computers), links (coaxial cable, twisted pair, optical fiber, radio, satellite), switches/routers (intermediate systems) are all components of a computer system. ✓
230) Big endian means ‘most significant byte first’, while little endian means ‘least significant byte first’. ✓
231) SOCK_STREAM is used for UDP connections.
232) SOCK_DGRAM is used for UDP connections. ✓
233) The optical fiber cable theoretically has unlimited bandwidth. ✓
234) Every domain name that is not already in use is free to claim as your own.
235) 255.255.255.128 starts with 1 zero and ends with 7 zeroes.
236) 255.255.255.128 ends with 7 zeroes. ✓
237) Port forwarding is a use of NAT. ✓
238) MAC addressed are not guaranteed to be unique. SWITCH
239) A switch has a lot of ports. ✓
240) A switch doesn’t understand MAC addresses.
241) A switch understands MAC addresses. ✓
242) A switch is more performant than a hub. ✓
243) A switch can transport UDP packets. ✓
244) A switch can’t transport TCP packets.
245) A switch can transport TCP packets. ✓
246) A switch can transport IP packets. ✓
247) A switch can’t transport IP packets. HUB
248) A hub doesn’t understand MAC addresses. ✓
249) A hub is more performant than a switch.

250) A hub doesn’t have many ports.
251) A hub understands MAC addresses.
252) A hub has many ports. MAC ADDRESS ✓
253) The recvfrom() call sends data to the UDP server.
254) The MAC address is represented on 6 hexa digits.
255) The MAC address is represented on 6 groups of 2 hexa digits. ✓
256) The MAC address is represented on 6 bytes. ✓
257) The MAC address can’t be changed.
258) The MAC address can be changed. ✓
259) FF:FF:FF:FF:FF is the broadcast MAC address.
260) 172.31.255.255 is not a private IP address.
261) 00:00:00:00:00:00 is not the broadcast MAC address. ✓
262) The routers use MAC addresses to send frames to other networks.
263) 255.255.255.255 is the broadcast MAC address.
264) The MAC address is represented on 12 hexa digits. ✓
265) 255.255.255.255 is not the broadcast MAC address. ✓
266) FF:FF:FF:FF:FF:FF is the broadcast MAC address. ✓
267) All the network cards have the same MAC address (Media Access Control Address).
268) FF:FF:FF:FF:FF is not the broadcast MAC address. ✓
269) The MAC address has 64 bits.
270) FF:FF:FF:FF:FF:FF is not the broadcast MAC address. LEVEL LINK TRANSPORT APPLICATION NETWORK
271) SSH is not on the Link Layer. ✓
272) SSH is not on the Transport Layer. ✓
273) SSH is not on the Network Layer. ✓
274) SSH is on the Transport Layer. ✓
275) SSH is on the Link Layer.
276) SSH is on the Network Layer.
277) SSH is not on the Application Layer.
278) SSH is on the Application Layer. ✓
279) IP is on the Transport Layer.
280) IP is on the Application Layer.
281) IP is on the Network Layer. ✓
282) IP is on the Link Layer.
283) IP is not on the Transport Layer. ✓
284) IP is not on the Application Layer. ✓
285) IP is not on the Network Layer.
286) IP is not on the Link Layer. ✓
287) HTTP is on the Transport Layer.
288) HTTP is on the Application Layer. ✓

289) HTTP is on the Network Layer.
290) HTTP is on the Link Layer.
291) HTTP is not on the Transport Layer. ✓
292) HTTP is not on the Application Layer.
293) HTTP is not on the Network Layer. ✓
294) HTTP is not on the Link Layer. ✓
295) SMTP is on the Transport Layer.
296) SMTP is on the Application Layer. ✓
297) SMTP is on the Network Layer.
298) SMTP is on the Link Layer.
299) SMTP is not on the Transport Layer. ✓
300) SMTP is not on the Application Layer.
301) SMTP is not on the Network Layer. ✓
302) SMTP is not on the Link Layer. ✓
303) DNS is on the Transport Layer.
304) DNS is on the Application Layer. ✓
305) DNS is on the Network Layer.
306) DNS is on the Link Layer.
307) DNS is not on the Transport Layer. ✓
308) DNS is not on the Application Layer.
309) DNS is not on the Network Layer. ✓
310) DNS is not on the Link Layer. ✓
311) FTP is on the Transport Layer.
312) FTP is on the Application Layer. ✓
313) FTP is on the Network Layer.
314) FTP is on the Link Layer.
315) FTP is not on the Transport Layer. ✓
316) FTP is not on the Application Layer.
317) FTP is not on the Network Layer. ✓
318) FTP is not on the Link Layer. ✓
319) TCP is on the Transport Layer. ✓
320) TCP is on the Application Layer.
321) TCP is on the Network Layer.
322) TCP is on the Link Layer.
323) TCP is not on the Transport Layer.
324) TCP is not on the Application Layer. ✓
325) TCP is not on the Network Layer. ✓
326) TCP is not on the Link Layer. ✓
327) UDP is on the Transport Layer. ✓

328) UDP is on the Application Layer.
329) UDP is on the Network Layer.
330) UDP is on the Link Layer.
331) UDP is not on the Transport Layer.
332) UDP is not on the Application Layer. ✓
333) UDP is not on the Network Layer. ✓
334) UDP is not on the Link Layer.✓NETWORK ADDRESS
335) The address 192.168.0.255 can't be a network address. ✓
336) The address 127.0.0.1 can be a network address.
337) The address 193.231.20.2 can be a network address.
338) The address 193.256.20.0 can be a network address.
339) The address 192.231.20.1 can be a network address.
340) The address 192.231.20.3 can be a network address.
341) The address 43.29.45.80/27 can be a network address.
342) The address 192.168.2.160/24 can be a network address.
343) The address 43.23.87.68/26 can be a network address.
344) The address 192.168.2.160/25 can be a network address.
345) The address 192.168.0.255 can be a network address.
346) The address 193.255.20.0 can be a network address. ✓
347) The address 193.231.20.0 can be a network address. ✓
348) The address 193.231.20.4 can be a network address. ✓
349) The address 193.255.20.0 can be a network address. ✓
350) The address 192.168.2.32/27 can be a network address. ✓
351) The address 43.23.87.64/27 can be a network address. ✓
352) The address 192.168.2.128/25 can be a network address. ✓
353) The network address can be computed with the broadcast address and the netmask.✓
354) The network address can be computed with the broadcast address and the IP address.
355) The network address can't be computed with the broadcast address and the netmask.
356) The network address can't be computed with the IP address and the netmask.
357) The network address can't be computed with the broadcast address and the IP address. ✓
358) The network address can be computed with the IP address and the netmask. ✓
359) There is only one computer with the address 127.0.0.1. PRIVATE ADDRESSES
360) All the IP addresses in the class 172.0.0.0/8 are private.
361) Not all the IP addresses in the class 172.0.0.0/8 are private.✓
362) 168.168.168.168 is a private IP address.
363) 168.168.168.168 is not a private IP address. ✓
364) 1.1.1.1 is a private IP address.
365) Not all the IP addresses from the class 10.0.0.0/6 are private. ✓
366) 127.16.0.1 is not a private address.✓

367) All the IP addresses from the class 172.0.0.0/12 are private.
368) 127.16.0.1 is a private IP address.
369) 172.32.0.1 is a private IP address.
370) 1.1.1.1 is not a private IP address.✓
371) 172.15.0.1 is not a private IP address. ✓
372) Not all the IP addresses in the class 192.168.0.0/8 are private. ✓
373) All the IP addresses from the class 172.16.0.0/12 are private. ✓
374) 172.16.0.1 is not a private IP address.
375) 172.31.0.1 is not a private IP address.
376) Not all the IP addresses in the class 192.168.0.0/16 are private.
377) All the IP addresses from the class 10.0.0.0/16 are private. ✓
378) 192.168.168.168 is not a private IP address.
379) 172.31.255.255 is a private IP address. ✓
380) 172.31.255.255 is not a private IP address.
381) Not all the IP addresses from the class 10.0.0.0/8 are private.
382) 10.10.10.10 is a private IP address. ✓
383) All the IP addresses from the class 10.0.0.0/8 are private.✓
384) 172.16.0.1 is a private IP address. ✓
385) Not all the IP addresses from the class 172.16.0.0/12 are private.
386) 192.168.168.168 is a private IP address. ✓
387) Not all the IP addresses from the class 10.0.0.0/16 are private.
388) CLI comes from Command Line Interface. ✓
389) ARP means Address Resolution Protocol. ✓
390) MAC means Media Access Control. ✓
391) DNS means Domain Name System.✓
392) Two computers from the Internet can have the same IP address if they have the same MAC address.
393) LAN is an acronym for Limited Area Network.
394) HTTP means Hyperspeed Transfer Protocol.
395) HTTP means Hypertext Transfer Protocol. ✓
396) MAC means Media Address Control.
397) CLI comes from Coding Line Interface.
398) ARP doesn't mean Address Resolution Protocol.
399) DNS means Domain Name Service. TOPOLOGIES
400) There are only two standard network topologies: Bus and Star.
401) Ring is a network topology, ✓
402) Ring is not a network topology.
403) Star is not a network topology.
404) There are more than two standard network topologies. ✓

405) Bus is a network topology. ✓
406) Star is a network topology. ✓
407) Bus is not a network topology. PROTOCOLS
408) HTTP does not use the TCP protocol.
409) HTTP uses the UDP protocol.
410) DNS uses the TCP protocol. ✓
411) DNS uses the UDP protocol. ✓
412) HTTP uses the TCP protocol. CONNECTION-ORIENTATION ✓
413) UDP is connection-oriented.
414) UDP is not connection-oriented. ✓
415) TCP is connection-oriented. ✓
416) TCP is not connection-oriented. DEFAULT GATEWAY
417) The dimension of an IP address class doesn't have to be a power of 2.
418) The dimension of an IP address class has to be a power of 2. ✓
419) The dimension of a network is 2^n, where n is the number of 0's in the IP.
420) The dimension of a network is 2^n, where n is the number of 0's in the netmask. ✓
421) The dimension of a network is 2^n, where n is the number of 1's in the netmask. COMPUTER
422) A computer can have more network cards. ✓
423) A computer can have only one network card.
424) There can't exist computers with the address 192.168.1.0.
425) A computer can have more IP addresses. ✓
426) A computer can't have 2 gateways. ✓
427) The DNS server configured on a computer has to be in the same network with the computer.
428) In a LAN there can't be more computers with the address 192.168.1.1. ✓
429) There can be computers with the address 192.168.1.0.
430) 2 computers from the Internet can have the same IP address if they have the same MAC address.
431) A computer can have only one IP address.
432) A computer is connected to a switch through a Straight-Through cable. ✓
433) 2 computers from the same network both physically and logically can't have different default gateways.

434) A router is connected to a computer with a Cross-Over cable. ✓SERVER

435) A web server can't run on ports different than 80.

436) The DNS server configured on a computer can be in the same network with the computer. ✓

437) A DNS server can be default gateway. ✓

438) More websites can't be hosted on the same web server. NETMASK

439) The netmask can't contain 0 bits embedded with 1 bits. ✓

440) The netmask can be determined using the IP address and the network address.

441) The netmask can be determined using the IP address and the broadcast address.

442) 0.0.0.0 represents a valid netmask. ✓

443) 255.255.224.0 represents a valid netmask. ✓

444) The netmask of a network with 1024 IP addresses is /10.

445) 255.255.0.0 represents a valid netmask. ✓

446) A network with the netmask 255.255.255.0 can have max. 254 computers. ✓

447) The netmask of a network with 1024 IP addresses is /12.

448) The netmask of a network with 512 IP addresses is /23. ✓

449) 0.0.0.0 is not a valid netmask.

450) 255.254.0.0 is a valid netmask. ✓

451) The netmask can't be determined using the IP address and the network address. ✓

452) The netmask of a network with 1024 IP addresses is /22. ✓

453) The netmask can't be determined using the IP address and the broadcast address. ✓

454) A netmask is a binary number on 48 bits.

455) A network with the netmask 255.255.255.0 has 128 IP's.

456) 255.255.225.0 is a valid netmask.

457) The netmask of a network with 512 IP addresses is /24.

458) The netmask of a network with 1024 IP addresses is /23.

459) The netmask can be computed using the broadcast address and the network address. ✓

460) The netmask can contain 0 bits embedded with 1 bits.

461) 254.255.0.0 represents a valid netmask.

462) A network with the netmask 255.255.255.0 can have max. 256 computers.

463) A netmask is a binary number on 32 bits. ✓

464) There are other types of sockets besides TCP and UDP. ✓

465) There are only TCP and UDP sockets.

466) There can't be more computers with the address 127.0.0.1.

467) There are more computers with the address 127.0.0.1. ✓
468) The address 127.0.0.1 can be a broadcast address.
469) 127.0.0.1 can't be configured on a system as default gateway.
470) 127.0.0.1 can't be configured on a system as a DNS server. ✓
471) The localhost is not 172.0.0.1. ✓
472) The localhost is 172.0.0.1.
473) The address 127.0.0.1 can't be a network address.✓474) 83.255.255.128.0 = /23
475) 255.255.128.0 = /17
476) 11111111 10000000 00000000 00000000 = 255.128.0.0 ✓
477) 193.55.44.170 & 255.255.255.128 = 19355.43.128
478) 11111111 10000000 00000000 00000000 = 255.1.0.0
479) TCP is always faster than UDP.
480) UDP is sometimes faster than TCP. ✓
481) TCP is sometimes faster than UDP. ✓
482) UDP is always faster than TCP.
483) TCP is safer than UDP. ✓
484) The accept() call is mandatory in any TCP server. ✓
485) The accept() call is mandatory in any UDP client.
486) The accept() call can be used in any TCP server. ✓
487) The accept() call is mandatory in any TCP client.
488) The accept() call is not mandatory in any TCP client. ✓
489) The recvfrom() call reads data from the UDP server. ✓
490) The recvfrom() call reads data from the TCP server.
491) The recvfrom() call sends data to the TCP client.
492) The recvfrom() call sends data to the UDP client.
493) The recvfrom() call doesn't send data to the TCP server. ✓
494) The recvfrom() call doesn't send data to the TCP client. ✓
495) The recvfrom() call sends data to the UDP server.
496) The recvfrom() call sends data to the TCP server.
497) The recvfrom() call doesn't send data to the UDP client. ✓
498) The recvfrom() call reads data from the UDP client. ✓
499) The recvfrom() call reads data from the TCP client.
500) The connect() call is mandatory in any TCP server.
501) The connect() call is mandatory in any UDP client.
502) The connect() call can't be used in UDP clients. ✓
503) The connect() call can't be used in TCP clients.
504) The connect() call can be used in UDP clients.
505) The connect() call can be used in TCP clients. ✓
506) The connect() call is mandatory in any UDP server.
507) The connect() call is mandatory in any TCP client. ✓

508) The sendto() call sends data to the UDP client. ✓
509) The sendto() call sends data to the UDP server.✓
510) The sendto() call sends data to the TCP client.
511) The sendto() call sends data to the TCP server.
512) The listen() call is mandatory in any TCP client.
513) The listen() call is not mandatory in any TCP client.
514) The listen() call is mandatory in any UDP server.
515) The listen() call can be used in any TCP server. ✓
516) The listen() call is mandatory in any TCP server.
517) The bind() call can be used in UDP clients. ✓
518) The bind() call can be used in TCP clients. ✓
519) The bind() call can't be used in TCP clients.
520) The bind() call can't be used in UDP clients.
521) The bind() call is mandatory in any TCP server. ✓
522) The bind() call is mandatory in any TCP client.
523) The bind() call is mandatory in any UDP server. ✓
524) A /24 class can be divided in 2 /25 subclasses. ✓
525) A class of IP addresses has to start at a multiple of the dimension of the class.
526) A class of IP addresses doesn't have to start at a multiple of the dimension of the class. ✓
527) A /24 class can be divided in 2 subclasses of 128 IP's. ✓
528) A /24 class can be divided in 3 subclasses of 128 IP's. 529) 192.168.2.155 is part of the 192.168.0.0/23 class.
530) 192.168.1.2/24 and 192.168.1.6/22 are part of the same network.
531) A network with the mask 255.255.255.0 has 256 IP's. ✓
532) A /24 class can be divided in 2 subclasses of 256 IP's. 533) 192.168.1.155 is part of the class 192.168.1.0/24.✓
534) A /24 class can be divided in 2 /25 subclasses. ✓
535) The class 193.231.20.0/24 can be divided in 2 subclasses of 128 IP's.✓536) 192.168.2.155 is part of the class 192.168.0.0/22.✓
537) A class /16 can't be divided in 16 /20 classes.
538) A /24 class can be divided in 3 /26 classes. ✓
539) 192.168.1.155 is part of the class 192.168.1.0/25. 540) 192.168.1.155 is part of the class 192.168.0.0/24.
541) A /8 class can be divided in 4 /10 classes. ✓
542) The class 192.231.20.0/24 can be divided in 3 subclasses of 128 IP's.
543) 192.168.0.2/24 and 192.168.1.6/24 are part of the same network.
544) A /16 class can be divided in 16 /20 classes. ✓
545) 192.168.0.2/23 and 192.168.1.6/23 are part of the same network. ✓
546) A /24 class can be divided in 3 /25 subclasses. 547) 192.168.1.155 is part of the class 192.168.0.0/23. ✓
548) A /24 class can be divided in 2 subclasses of 512 IP's.

549) A /8 class can be divided in 4 /9 classes.
550) The subnetwork address for the station with the IP address 192.120.0.1/16 is 192.120.0.1.
551) The subnetwork address for the station with the IP address 192.120.0.1/16 is 192.120.0.0. ✓
552) There can't exist computers with the address 192.168.1.0. ✓
553) The network card acts as a physical interface between the computer and the network cable.
554) LAN is a global network.
555) LAN is not a global network. ✓
556) Mobile phones can't connect to the internet without a network card. ✓
557) The logical AND between the mask and IP address has as result the broadcast address.
558) The IP address can't be determined using the network address and the netmask. ✓
559) UDP waits for the confirmation that the packets were received.
560) UDP is safer than TCP.
561) The routers use the IP addresses to transfer frames to other networks. ✓
562) A wireless access point has a limited area coverage. ✓
563) More websites can be hosted on the same web server. ✓
564) An IP address is a binary number on 32 bits. ✓
565) A router connects to a computer with a Straight-through cable.
566) TCP waits for the confirmation that the packets were received. ✓
567) An IP address is a unique identifier for every computer in an IP network. ✓
568) The network card doesn't transfer data to other computers.
569) A UDP socket is created with the parameters AF_INET and SOCK_DGRAM. ✓
570) An IP address is a common identifier for more computers in an IP network.
571) The IP address can be determined with the network address and the netmask.
572) There can be more computers with the address 192.168.1.1 in a LAN.
573) A TCP is created with the parameters AF_INET and SOCK_DGRAM.
574) The DNS service runs on the TCP port 53.
575) The DNS service runs on the UDP port 53. ✓
576) A UDP socket is created with the parameters AF_INET and SOCK_STREAM.
577) A TCP socket is created with the parameters AF_INET and SOCK_STREAM. ✓
578) HTTPS transfers encrypted data. ✓
579) HTTP transfers encrypted data.
580) A network card can have only one IP address.
581) A network card can have more IP addresses. ✓
582) The address 87.35.15.63/26 can be a broadcast address. ✓
583) The broadcast address can be computed using the network address and the netmask. ✓
584) The broadcast address can be computed using the IP address and the netmask. ✓
585) The address 83.35.15.8/28 can be a broadcast address.
586) The address 127.0.0.1 can't be a broadcast address. ✓
587) The broadcast address can't be computed using the network address and the netmask.

588) The address 87.35.15.7/29 can be a broadcast address. ✓

589) The broadcast address for the station with the IP address 192.120.0.1/16 is 192.120.255.255.✓

590) The network card can be external. ✓

591) The BUS topology consists of a single cable which connects in series all the computers from the network. ✓

594) How many hosts can be addressed on 10.0.0.0/16? 65534 ✓

595) A computer connects to a switch using a Cross-Over cable.

596) A web server can run on ports different than 80. ✓

600) Two computers from the Internet can have the same IP address if they use private IP addresses. ✓