

234. Where ammonia is used in refrigerating machinery, should the machinery by preference be isolated? Why? In reply, give what information you possess bearing on the matter, naming the ships for purposes of identification.
235. Explain how the ammonia is removed from the tubes in which it is supplied, and how passed into the refrigerating-machine.
236. What objection is there to the presence of water in the ammonia?
237. Describe the ammonia process of refrigeration.
238. Of what material are the parts made which are in contact with the ammonia?
239. Are escape-valves fitted to the compressors of ammonia-machines?
240. What is the maximum pressure found in the compressors of ammonia-machines?
241. What kind of pressure and other gauges are used in ammonia machines?
242. Explain how carbonic acid is removed from the tubes in which it is supplied, and how passed into the refrigerating-machine?
243. What objection is there to the presence of water in the carbonic acid?
244. Describe the carbonic-acid process of refrigeration.
245. Of what material are the parts made which are in contact with the carbonic acid?
246. Are escape-valves fitted to the compressors of carbonic-acid machines?
247. What is the maximum pressure found in the compressors of carbonic-acid machines?
248. What kind of pressure and other gauges are used in carbonic-acid machines?
249. In which type of machine is brine used? What is its density? Where does it circulate?
250. Are fans for circulating air used in any of these processes? If so, why are they necessary?
251. What means are in some cases employed for ascertaining the temperatures of refrigerating-chambers without entering them?
252. What effect may the swabbing of the compressor piston-rods have upon the working of refrigerating machinery?
253. What is a rectifier? Explain its use.
254. Describe the cold-air process of refrigeration.
255. Of what material are the air-suction and delivery valves of a cold-air machine made? How are the valves kept on their seats?
256. How many compressors are there to a cold-air machine?
257. What is the duty of the expansion cylinder of a cold-air machine?
258. What objection is there to the presence of moisture in the air passed through the cold-air machine?
259. How is water to some extent removed from the air? What is the minimum temperature of the air?
260. What is the maximum pressure found in the compressors of cold-air machines?
261. What kind of pressure and other gauges are used in cold-air machines?
262. In refrigerating-engines generally, where is the exhaust steam led?
263. Cold-air chambers on board ship are insulated: how, and why?
264. Is it prudent to allow the wires of an electric circuit to pass through the insulation? Explain fully.
265. Describe the construction of a feed-water heater, and give the name of its manufacturer.
266. To about what temperature is the feed-water raised by passing through a feed-heater?
267. What fittings are usually placed on a feed-heater? Why are they necessary?
268. Describe any well-known ash-ejector.
269. Describe any well-known independent feed-pumps.
270. Are independent feed-pumps automatic in their action? Explain the action.
271. What advantage, if any, have independent feed-pumps over feed-pumps worked by the main engines?
272. Describe the construction of a feed-filter, enumerating its valves and cocks.
273. How can the filter be cleaned? and what ingredients are generally removed when cleaning takes place?
274. What is the intercepting material in a filter made of? How is it fitted?
275. Describe an evaporator, and mention the type.
276. What fittings are necessary with evaporators?
277. How is the brine got rid of in an evaporator?
278. How may the evaporator coils be cleaned?
279. What is a dynamo? Describe its various parts. For what is it used?
280. In what respects does an electric motor differ from a dynamo? Where are electric motors sometimes used on board ship?
281. Describe a system of electric lighting employed on board ship.
282. How is the position of a fault in the electric circuit discovered?
283. What is "sparking," and may it under some circumstances (naming them) be a danger?
284. What is "short-circuiting," and to what evil may it give rise?
285. What means are employed to prevent any part of the circuit becoming overheated?
286. Describe the features of an arc lamp.
287. Describe the construction of a glow-lamp.
288. What is the usual candle-power of the small glow-lamps in general use on board ship?
289. Define the following terms: Ampere, volt, ohm, watt. What is the measure of an electrical horse-power?
290. Explain the uses of switches, brushes, commutators, cut-outs, field-magnets, armatures, and resistance-coils.
291. Why is it desirable to fit a dynamo in a cool place on board ship?
292. What undesirable effect will ultimately occur to an electric wire whose sectional area is constantly diminishing, say, through corrosion?
293. What danger might arise from leading electric wires through coal-bunkers?
294. Is it better to lead electric wires above or below side scuttles? Why?
295. What instruments are used on board ship to ascertain the strength of an electric current?
296. Many ocean-going steamers are fitted with hydraulic cranes, &c.: Where do they obtain their power? How is the hydraulic pressure kept at a relatively constant amount?
297. Is any difficulty experienced in working hydraulic cranes in frosty weather; if so, why?
298. Describe any steam steering-gear you are acquainted with.
299. When the helm is put hard over and the ship is going full speed ahead, what prevents the rudder returning to the amidship position?
300. In the case of a steamship under way does the officer or man manipulating the steam-steering-wheel overcome any resistance exerted by the rudder?