

AVIM 103A/104A QUESTION GUIDE

SYLLABUS REVIEW:

1. On which absence or total accumulation of time missed will you be dropped from AVIM103A/104A?
2. Does missing the first day of lecture or lab count toward the accumulation of time missed?
3. How is your attendance and make-up time recorded in AVIM 103A/104A?
4. Are "re-take" examinations or "extra-credit" provided?
5. What are the posted office hours this semester?
6. Must you be supervised during office or make-up hours; by whom?
7. Are you permitted to work in the lab unsupervised?
8. Other than posted office hour periods, can other times be arranged for office hours or make-up time?
9. Are office hours provided during the week of final exams?
10. Which personal tools are required during AVIM 104A lab periods?

POLY-FIBER FABRIC COVERING PROCESS AND OVERVIEW OF OTHER COVERING PROCESSES:

11. What are some of the advantages of a fabric covered aircraft vs. all-metal aircraft?
12. What are two organic materials previously used for aircraft covering?
13. What are the disadvantages of organic covering materials; Are organic fabrics flammable?
14. Linen is derived from which plant? Given adequate care, how long will a linen cover generally last?
15. What purpose does aircraft dope serve when finishing organic materials?
16. Are aircraft dope finishes flammable?
17. Other than the Poly-Fiber[®] covering process, name another covering process that uses polyester (Dacron[™]) fabric.
18. What type of fabric is used in the Razorback[®] covering process?
19. How is Razorback[®] fabric tautened?
20. Are FAA airworthiness directives sometimes issued against finishing systems?
21. Which fabric covering system mentioned in class has an FAA airworthiness directive issued against it?
22. Why is a thorough and proper airframe inspection required before covering with Poly-Fiber[®]?
23. What FAA approved document permits Poly-Fiber[®] to be substituted for other types of aircraft cover?
24. What Poly-Fiber[®] finish material is used to seal the fabric and provide flame retardance?
25. Which Poly-Fiber[®] finish material is used to protect the fabric from ultra-violet (UV) light?
26. Why is vinyl used as a component in all common Poly-Fiber[®] finishing products?
27. Define the abbreviation M.E.K.; Is M.E.K. hazardous; how do you help limit exposure to M.E.K.?
28. Which Poly-Fiber[®] finishing products contain M.E.K.?
29. What is used to thin (reduce) Poly-Tak[®] when required?
30. What is the trade name of the fabric cement used to attach the fabric to airframe?
31. What is Poly-Tone[®]; Does Poly-Tone[®] used over fabric work as well over metal?
32. Why is EV-400[®] Epoxy Varnish, and not one-part spar varnish required on wooden surfaces prior to covering?
33. Why is EP-420[®] Epoxy Primer, and not one-part metal primers required on metal surfaces prior to covering?
34. What method is used to help prevent fraying when cutting Poly-Fiber[®] fabric?
35. The Poly-Fiber[®] process usually requires how much of an overlap at the leading edge of a wing?
36. The Poly-Fiber[®] process usually requires how much of an overlap at the trailing edge of a wing?
37. What iron wattage is required for Poly-Fiber[®] fabric work?
38. How is an iron properly calibrated; why is a hot air gun not to be used?
39. What calibrated iron temperature is used to thermo-soften and level Poly-Tak[®] and Poly-Brush[®] ridges?
40. What calibrated iron temperature is used to smooth edges of finishing tapes and remove creases?
41. What calibrated iron temperature is used for initial fabric tautening; for final fabric tautening?
42. What type of iron is used for tautening non-load carrying areas?
43. Other than destroying calibration or setting, why is it important not to drop a close-quarter iron when hot?
44. Why are dope-type finishes not used in the Poly-Fiber[®] finishing system?
45. What material is used to reduce Poly-Brush[®]; should M.E.K. be used to reduce Poly-Brush[®]?
46. What is the proper reducing ratio for the first brushed coat of Poly-Brush[®]?
47. Should the first coat of Poly-Brush[®] be brushed or sprayed; Should Poly-Brush[®] drips be sanded from fabric?
48. Should fabric cement be used to attach fabric to rib cap-strips?
49. What are acceptable methods used to attach fabric to wing ribs?
50. How is rib lace spacing determined? What is the prop wash area?
51. What rib lace spacing is used for the aircraft empennage?
52. May a pen be used to mark the fabric surface?
53. Rib lacing should be parallel to what surface?
54. What is reinforcing tape; where is reinforcing tape applied?
55. Is reinforcing tape applied to the fabric surface before or after rib lacing?

56. How wide should reinforcing tape be? How far should reinforcing tape be extended?
57. What are the only two knots approved for use with the Poly-Fiber[®] STC?
58. What knot is used to begin rib lacing? How far should the first knot be from the spar face?
59. After rib lacing of an entire rib, what knot is used to tie off the last modified seine knot?
60. What other mechanical attachments are used instead of rib lacing?
61. After rib lacing is complete, how is excess wax removed from Poly-Fiber[®] fabric?
62. After rib lacing is complete, why is it necessary to fill the reinforcing tapes with reduced Poly-Brush[®]?
63. How is placement of inspection holes determined?
64. What are common placement areas for inspection rings?
65. What is used to attach inspection hole reinforcements to Poly-Fiber[®] fabric; how are drips cleaned?
66. In which direction are finishing tapes placed first, span wise or chord wise?
67. How are the ends of finishing tape best cut for appearance?
68. Where finishing tape will be applied, why is fabric pre-coating with Poly-Brush[®] required?
69. What are common finishing tape widths? Why are finishing tape edges pinked?
70. How much of the finishing tape edge must be wetted-out with Poly-Brush[®] for adequate adhesion?
71. Where are "bias" finishing tapes used in fabric covering?
72. Where are common collection points for water that should be drained from the aircraft?
73. How are drain holes made in Poly-Fiber[®] fabric; what can be used as a melting guide for a clean hole?
74. How large should drain holes be; how are drain hole grommets attached to a Poly-Fiber[®] fabric surface?
75. Should drain hole grommets be applied before or after finishing tapes have been applied?
76. Which direction must the open end of sea-plane drain grommets face?
77. How are Poly-Fiber[®] fabric wrinkles corrected?; How are bubbles beneath finishing tape corrected?
78. How are Poly-Tak[®] lumps beneath fabric corrected; How are curled pinked edges of finishing tapes corrected?
79. What are two options in covering the fuselage and surfaces of an aircraft in the Poly-Fiber[®] system?
80. Why should aircraft control surfaces be checked for balance after covering is completed?
81. What type of stitching is used when hand-sewing Poly-Fiber[®] fabric is required?
82. Is bare Poly-Fiber[®] (raw polyester) fabric affected by sunlight; in what way?
83. What is one method for determining if the fabric is adequately covered with Poly-Spray[®]?
84. Should Poly-Spray[®] be thinned with Poly-Fiber[®] reducer?
85. What is considered a cross-coat of Poly-Spray[®]?
86. Why are foam-type brushes not used in the Poly-Fiber[®] covering system?
87. What are acceptable Poly-Fiber[®] marking materials?
88. What type of stir sticks are used to stir solids that settle to the bottom of 5-gallon Poly-Spray[®] containers?
89. Are stirrers powered by electric drill motors acceptable when stirring Poly-Spray[®]?
90. What causes finishing tape edges to curl on Poly-Sprayed[®] finishes; how are they corrected?
91. What causes pinholes in a Poly-Sprayed[®] fabric finish; how are pinholes in the finish corrected?
92. What grit of sandpaper is used for wet-sanding a Poly-Sprayed[®] finish; Where is it important not to sand?
93. Is the last cross-coat of Poly-Spray[®] sanded?
94. Will slow drying of a Poly-Tone[®] finish produce a glossier or flatter finish? How is drying time regulated?
95. Are enamels, lacquers, epoxy paint and butyrate dope used in Poly-Fiber[®] fabric finishing?
96. What are the current types of Poly-Fiber[®] fabrics and their characteristics?
97. How are Poly-Fiber[®] covered aircraft fabric inspected for airworthiness during an annual or 100-hour inspection?
98. Does the FAA recognize in writing either the Seyboth or Maule fabric testers as acceptable fabric testers?
99. How are holes 8-inches in diameter or less repaired in Poly-Fiber[®] fabric?
100. How are holes greater than 8-inches repaired in Poly-Fiber[®] fabric?

AIRCRAFT FINISHING (PAINTING)

101. What is the primary purpose for painting aircraft? What are other purposes for painting aircraft?
102. What basic components make up paint?
103. What are the purposes of a binder in paint; what are the purposes of additives in paint?
104. What are some mechanical methods of iron oxide and aluminum oxide removal before painting?
105. Which Scotch-Brite[®] abrasive pad is generally suited to aircraft refinishing work?
106. What materials and structures must be protected from the effects of aircraft chemical paint stripper?
107. What materials are acceptable for use as masking materials to avoid chemical stripper contact?
108. How are finishes removed from fiberglass component surfaces?
109. What protective gear is required when using chemical paint stripper on aircraft?
110. What health and safety precautions must be observed when chemically stripping an aircraft?
111. What is the active ingredient in wax-based chemical paint stripper?
112. Why is a dabbing motion in one direction to apply stripper with a brush recommended?
113. How do enamels and some primers respond when attacked by wax-based chemical stripper?

114. How do acrylic lacquer paints respond when attacked by wax-based chemical stripper?
115. How do polyurethane paints respond when attacked by wax-based chemical paint stripper?
116. Why is liquid solvent (M.E.K.-based) chemical paint stripper only used on small areas?
117. What is used to neutralize wax-based chemical stripper and stripper residue from an aircraft surface?
118. Why must all traces of paint stripper (and residue) be removed before painting?
119. What is a fayed edge; why are fayed edges of importance in stripper removal?
120. What are some alternatives to chemical stripping?
121. What variables may be controlled when dry-stripping an aircraft?
122. What are common types of blast media used when dry stripping an aircraft?
123. What is the Boeing Flashjet™ system of finish removal?
124. What is used as a general purpose cleaner on bare metal and rubber?
125. How are plastic-backed decals best removed when stripping?
126. How is oxidation identified on ferrous parts; on aluminum; on magnesium?
127. Why is it important to be neat and orderly when preparing finishing products?
128. Why are solvents such as DuPont Prepsol® used in aircraft finishing?
129. Are solvents such as DuPont Prepsol® intended to neutralize stripper residue?
130. What is a conversion coating; What is the purpose of the dilute acid in the conversion coating?
131. What purpose does acid etching serve before priming and painting?
132. How are magnesium alloy parts conversion coated?
133. How are dis-similar metals protected?
134. Define the term “anodize”. Define the term “alodine”.
135. How are scratched anodized finishes repaired?
136. Describe the primary functions of a primer?
137. What are the principal reasons for applying a primer before finishing a metal surface?
138. Does zinc chromate primer form an absolutely moisture-tight surface?
139. How does zinc chromate primer inhibit corrosion?
140. What is the appropriate thinner for zinc chromate primer?
141. Can zinc chromate primer be used as a base beneath acrylic nitrocellulose coatings?
142. What possible hazards are associated with zinc chromate primer?
143. Where is red oxide primer used?
144. Why is an epoxy-type primer supplied in two parts?
145. Will acrylic cellulose nitrate modified primer adhere to bare metal?
146. Describe a wash primer. What is the time-frame for application of wash primers?
147. What is the purpose of the dilute phosphoric acid in wash primer?
148. How is complete conversion of the acid assured when using wash primers?
149. If required, how are wash primers hydrated?
150. What is the appearance of filiform corrosion on bare metal?
151. Why does a blistered paint finish sometimes indicate the presence of filiform corrosion beneath the paint?
152. How is filiform corrosion prevented?
153. Why are polyurethane enamel top coats more likely to cause filiform corrosion than lacquer top coats?
154. What is nitrocellulose lacquer thinned with?; Why is thinning necessary?
155. How does nitrocellulose lacquer dry?
156. Is nitrocellulose lacquer a durable finish?; Are nitrocellulose lacquer finishes easily repaired?
157. Can nitrocellulose lacquers be applied over a zinc chromate primed surfaces?
158. What property does acrylic give to acrylic nitrocellulose lacquer finishes?
159. Does acrylic nitrocellulose lacquer have a high or low solid content?
160. What thinner is appropriate for acrylic nitrocellulose lacquer?
161. Will acrylic lacquer finishes adhere to old-type zinc chromate primer?
162. When spraying acrylic lacquer, why are several light coats preferred rather than a few heavy coats?
163. How do enamel base paints cure?
164. What is the difference between alkyd and acrylic enamels?
165. Are epoxy paints two-part paints; what occurs when the two parts are mixed?
166. What are the advantages of polyurethane enamel paint?
167. When referring to polyurethane enamel paints, what is meant by the term “induction period”?
168. What are common trade names of polyurethane enamel paints?
169. Does polyurethane enamel have a high or low solid content; do these finishes cure quickly or slowly?
170. A finish specified as 1.5-mil thick is how thick?
171. How many hours should elapse before taping a polyurethane enamel finish?
172. Why is it important to clean spray equipment after spraying polyurethane enamel paints?
173. What safety precautions should be observed when using polyurethane enamel paints?

174. Why are paints thinned or reduced; what is the difference between a thinner and a reducer?
175. What is the function of a thinner or a reducer?
176. Why is a viscosimeter used; how is a viscosimeter used?
177. What are the three primary colors? How is a darker shade sometimes color matched?
178. Where is another term for "acid proof" paint; where was acid proof paint commonly used?
179. How is wing walk compound applied; May it be applied over the entire wing surface?
180. Why is linseed oil used in tubing; how is linseed oil used to help detect cracks in tubing?
181. How are nitrocellulose finishes identified; Acrylic; Epoxy?
182. What purpose does turpentine serve as a finishing product?
183. What are the functions of an air transformer? How often should an air transformer be drained?
184. What is a tack cloth; why is it important not to apply heavy pressure when using a tack cloth?
185. Describe the operation of a spray gun.
186. How many valves does a standard siphon-type spray gun have?
187. What does the wing port knob control; what does the fluid knob control?
188. What adjustments are possible with a standard siphon-type spray gun?
189. How do you properly adjust the pattern of a siphon-type spray gun?
190. How is the siphon gun air cap positioned to produce a vertically dispersed spray pattern?
191. Mis-adjustment of which spray gun control causes excessive over spray?
192. What type of pattern will be produced by excessive atomizing air pressure?
193. What causes a teardrop shaped pattern or a crescent shaped pattern?
194. What is the first thing to check if a spray gun begins to spit?
195. What are common causes of spray guns spitting?
196. What will happen if the vent of a siphon type spray gun becomes plugged with dried material while spraying?
197. What is the preferred distance from the spray gun nozzle to the work surface?
198. How much should each pass of spray overlap another pass?
199. Why is it important not to arc the spray gun while painting?
200. Why is it desirable to spray so that over-spray falls ahead of you?
201. Describe a few ways that paint over-spray can be controlled.
202. What will happen if the cap is over-tightened on the paint cup?
203. Why is it important not to immerse the entire gun in M.E.K. for cleaning?
204. What is the general rule for selecting spray gun cleaning agents?
205. Why is M.E.K. not used as a general-purpose cleaning agent?
206. Why are respirators used in conjunction with paint spraying?
207. How do air-hose diameter and length affect pressure drop?
208. What are the advantages of pressure spray equipment?
209. What is the advantage of electrostatic painting?
210. What causes runs to appear when using a spray gun; what causes sags to appear when using a spray gun?
211. What type of tape should be used when laying out aircraft paint trim lines?
212. Why are trim tapes thumb-nailed before spraying trim colors?
213. What is the advantage of "airless" spray equipment?
214. Why are flat black finishes applied to the face of a propeller?
215. What factor should be considered when selecting paint finishes for radome surfaces?

NATIONALITY AND REGISTRATION MARKING:

216. What entity assigns nationality marking?
217. Which Federal Aviation Regulation dictates identification and registration marking (display of markings)?
218. Which Federal Aviation Regulation dictates aircraft registration (including number of symbols)?
219. May a U.S registered aircraft be operated without nationality and registration marks; if so, under what conditions?
220. What character size is permitted on exhibition, antique or other aircraft as defined in the Federal Air Regulations?
221. What Roman capital letter is used to designate U.S registration?
222. What area is typically used when registration marking is displayed horizontally on a fuselage surface?
223. What is the location is used for the marking of spherical balloons?
224. What is the standard nationality and registration character height used when marking fixed-wing aircraft?
225. What is the standard nationality and registration character height used when marking gliders?
226. What is the standard nationality and registration character height used when marking exhibition aircraft?
227. Except for the number "1", what is the standard nationality and registration character width?
228. What is the standard nationality and registration character thickness?
229. What is the standard nationality and registration character minimum spacing?
230. When are U.S. nationality and registration markings removed from an aircraft?
231. In addition to the prefix letter "N", what the maximum number of symbols permitted for aircraft identification?

232. What rules are specified in the Federal Air Regulation concerning the numbers and suffix letters?

233. What must precede the first "0" (zero) of an identification number?

234. Why are identification letters "I" and "O" not permitted?

CABIN INTERIORS AND RESTRAINTS:

235. What TSO marking is typically used for aircraft seat-belts?

236. Which FAR specifies the use of seats, berths, litters, safety belts, and shoulder harnesses in aircraft?

237. What TSO marking is typically used for aircraft harnesses?

238. Are all aircraft restraints marked with a TSO number?

239. Airworthy "Type Certificated" seat-belts are designed to accept how much of a tensile load?

240. Airworthy TSO marked seat-belts are designed to accept how much of a tensile load?

241. How does the FAA define as term "fire resistant"? How does the FAA define the term "fire-proof"?

242. Which Federal Air Regulation specifies fire-resistant material use in cabin interiors?

243. What seat belt/restraint attachment methods are acceptable for aircraft constructed of truss tubular steel?

COMPOSITES:

244. Define the term "reinforced" plastics? What are common reinforcements? What are common plastics?

245. Define the term "modulus"; why is modulus an important factor in composite reinforcements?

246. What are common resin systems; what properties do these resin systems have?

247. What are common mixing ratios for polyester resin and catalyst; for epoxy resin and hardener?

248. What is the common catalyst for polyester resin? Why are many polyester resin catalysts hazardous?

249. What precautions should be observed when handling and working with polyester resin catalysts?

250. How does polyester resin cure; How does epoxy resin cure?

251. Why are epoxy resin systems generally superior to polyester resin systems?

252. Why are elongation values important in the selection of resin used with reinforcing materials?

253. What are possible weave patterns for these reinforcing materials?

254. What is the principle advantage of crowfoot (satin) weave reinforcements?

255. Define the term "bi-directional" and "uni-directional" used to describe fabric reinforcements.

256. What are common aircraft applications for uni-directional tape?

257. What are some of the principle steps in the manufacture of fiberglass filament?

258. Define "E" type fiberglass; What properties does "E" type fiberglass have?

259. Define "S" type fiberglass; What properties does "S" type fiberglass have?

260. What are some advanced composite materials?

261. Which composite reinforcement is typically uses the designation of "tow" to describe filaments in a bundle?

262. Define the term "Denier"; which fabric reinforcement is defined by a Denier numbering system?

263. When replacing damaged reinforcing plys, is ply orientation important? Why?

264. What is the advantage of sandwich construction over conventional metal construction?

265. Sketch and describe a simple sandwich construction cross-section.

266. What tools are typically required to complete a honeycomb core repair?

267. Define the terms "micro-slurry", "wet-micro" and "dry micro". What are the mixing ratios for each?

268. Laminated panels having damaged fastener holes are sometimes repaired with resin and what other materials?

269. What is moldless construction; Which aircraft design makes use of moldless construction?

270. Which thixotropic materials are used in structural repair of fastener holes?

271. What is potting compound; What is the FAA suggested damage limitation for a potted compound repair?

272. What types of adhesives are used in honeycomb sandwich repairs?

273. What is shelf life? What is pot life?

274. How is laminated fiberglass inspected for cracks?

275. What is the metallic ring test?

276. What type of drill is best suited for drilling cured aramid reinforcements; For cured graphite reinforcements?

277. What may radiography detect in sandwich construction?

278. What is a thixotropic agent and what is its use?

279. Which composite material conducts electricity?

280. What tool is sometimes used to help establish ply orientation?

281. Define 00, 450 and 900 ply orientation.

282. What is the generally accepted fabric reinforcement to resin ratio?

283. Where is information obtained for composite structural repairs of large aircraft?

284. Draw a cross-sectional view of a vacuum-bagged lay-up in progress.

285. Define the term "pre-preg".

286. Pre-pregs are furnished as "Stage-B" materials. Define the term "stage-B".

287. Define the term "out-time"; Why is out-time of importance with pre-preg materials?

288. How is hot-bonder temperature monitored and controlled?
289. Why are sandwich panels made of metal honeycomb construction used in high-speed aircraft?
290. What is a "water break" test? What does a water break test detect?
291. What is the simplest method testing method for detecting delaminated honeycomb sandwich structure?
292. Which tool is most effective in removing damaged area from a laminated honeycomb panel?
293. How are balsa wood plugs indexed when replacing damaged honeycomb core material?
294. What two methods are used to manufacture aluminum-alloy honeycomb?
295. Which cellular wall shape is commonly used in the manufacture of aluminum-alloy honeycomb?
296. Define the term "ribbon direction".
297. What is a release agent; where are release agents used; what are common release agents?
298. Why is vacuum-bagging generally considered to be a superior process compared to hand-layup?
299. What is "flash breaker" tape?
300. Which hardware material is compatible with graphite structure?
301. What may occur if standard hole-filling fasteners are used in composite materials?
302. What non-destructive testing method is commonly used after a composite structural repair?

THERMOPLASTIC MATERIALS:

303. Define the terms "*thermo-setting*" and "*thermo-plastic*"
304. Why are acrylic plastics generally superior to cellulose acetate plastics?
305. What tests may be performed to distinguish acrylic from cellulose acetate plastics?
306. What is the active chemical ingredient in most one-part acrylic plastic cements?
307. What is the active chemical ingredient in the liquid form of cellulose acetate plastics?
308. Describe an acrylic plastic cement bond.
309. Why are thermoplastics "*annealed*"? Why are they "*heat-treated*"?
310. What is the approximate tensile strength of acrylic material?
311. Acrylic material surface hardness is comparable to what material?
312. What properties do acrylic materials have that make them useful for transparent enclosures?
313. What is the precursor material used in the manufacture of acrylic plastic?
314. What are common trade names of acrylic materials; of polycarbonate materials?
315. What is the minimum bend radius for bending acrylic material; for cellulose acetate material?
316. Describe the drill used in drilling plastics; why is a zero degree rake angle important?
317. Are repairs to most aircraft transparent enclosures considered temporary or permanent?
318. What fastener hole clearance size does AC43.13-1B recommend when bolts pass through plastic enclosures?
319. What are three factors that may cause crazing?
320. Define crazing? What two reasons cause crazing to be considered hazardous?
321. What is the general forming temperature for acrylics?
322. What type of gloves should be worn when handling hot acrylic material?
323. What may be used to mark directly on acrylic surfaces?
324. How are scratches removed from acrylic materials?
325. What are common commercial products recommended for scratch removal?
326. What storage conditions are best for acrylic materials?
327. How should formed parts be stored to prevent damage; what is the maximum recommended temperature?
328. What STC kits are sometimes available for aircraft that have transparent enclosures?
329. Who is permitted to replace a general aviation aircraft windshield and return it to service?
330. Is replacement of a non-pressurized general aviation aircraft windshield a major repair?

AIRCRAFT WOOD

331. What are some of the advantages of aircraft parts constructed of wood; what are some of the disadvantages?
332. What aircraft parts can be fabricated from wood?
333. Which aircraft today have component parts made of wood?
334. Define the component parts of a typical wooden rib.
335. Name a few wooden constructed aircraft that are subject to FAA Airworthiness Directives.
336. Define tree nomenclature: bark, cambium, heartwood, sapwood, annual ring, springwood, summerwood and grain.
337. What tree leaf shape do softwoods have; what tree leaf shape do hardwoods have?
338. What are the characteristics of hardwoods and softwoods?
339. Describe the cellular structure of softwoods and hardwoods.
340. What softwood is used as the standard for comparison with other softwoods?
341. Define solid, laminated and plywood construction.
342. What type of information about wood aircraft construction is contained in ANC-18 and ANC-19?
343. Does AC43-13-1B have information concerning wood specie substitution?

344. What military specification number is used to identify most aircraft solid woods?
345. What military specification number is used to identify most aircraft plywood?
346. What is the difference between plywood and laminated wood?
347. What solid woods are used in aircraft construction?
348. What solid wood is used as the standard for comparison with other solid woods?
349. What are common types of plywood used in aircraft construction?
350. What are common core materials in plywood?
351. What are the advantages of plywood construction?
352. Which type of solid wood may be bent using steam?
353. What steaming time is required for a ¾-inch piece of wood?
354. How are jigs for holding steamed parts constructed to allow for springback?
355. Define the term "*wane*"? Define the term "*brash*"?
356. Define the appearance of quarter-sawed solid woods; define the appearance of plain-sawed solid woods?
357. What are the advantages of using quarter-sawed wood for aircraft construction?
358. What is the acceptable range of moisture content in aircraft wood; what is the optimum value?
359. What are two ANC references useful in inspecting wooden structure?
360. What are the seven wood defects never permitted in aircraft quality wood?
361. How is wood decay detected and identified; what methods are used to inspect wood for decay?
362. Describe the appearance of compression failure in aircraft wood?
363. What are the common plywood skin repairs; what are their limitations?
364. What are two methods of controlling shrinkage in plywood skins?
365. AC43.13-1B specifies which type of wood adhesive for use in certificated aircraft?
366. Which adhesive is popularly used in armature-built aircraft construction?
367. How strong should a glue joint be and how are they inspected?
368. Which woods must never be sanded prior to gluing and why?
369. What are the different types of aircraft glue?
370. Define the terms "*open*" and "*closed*" assembly.
371. How is pressure applied while glue joints set?
372. How may elongated bolt holes in aircraft spars be repaired?
373. How is a double curvature in plywood skin detected?
374. What conditions would permit the smallest bend radii for a given piece of plywood?
375. What is the purpose of aircraft varnish?
376. What is the maximum permissible slope of grain in solid wood?
377. What is the purpose of a gusset used in wooden rib construction?
378. Which area of a wooden spar is under the stress?
379. How does the FAA define the replacement of a wood spar?

CONVENTIONAL FABRIC COVERING PROCESS

380. What is meant by the terms warp, fill, bias, selvage and pinked edges?
381. How strong is Grade A and Intermediate Grade cotton?
382. AC43.13-1B uses what factors to determine selection of fabric?
383. Define the term "wing loading", how is wing loading calculated?
384. Define the term "wing aspect ratio". How is it calculated? How does aspect ratio affect aircraft stall speed?
385. Surface (finishing) tape is made from which material and in what widths?
386. What is the legal limit of deterioration for both Grade A and Intermediate Grade cotton covering?
387. Where and how is reinforcing tape used?
388. What is used to determine rib lace spacing?
389. Which special fasteners are used in lieu of rib lacing?
390. What material is sometimes used for inter-rib bracing?
391. What is meant by the term "dope proofing", why is it necessary and what materials may be used?
392. What purpose does fabric serve when applied over plywood-skinned wings?
393. What is the Vne requirement for anti-tear strips?
394. What is the "*standard*" knot used in rib stitching?
395. What stitch is primarily used in repair of tears and what is the size limitation for tears?
396. What is the size and Vne limitation of unsewn (doped-on) repairs?
397. What materials are used in the manufacture of drain grommets and reinforcing rings?
398. What are the causes of fabric deterioration?
399. What are the two types of dope used in aircraft finishing?
400. What are the characteristics of both types of aircraft dope?
401. What is used to thin nitrocellulose dope? What is used to thin butyrate dope?

402. May acetone be used to thin aircraft dope? Why or why not?
403. What may be used to detect a nitrate dope finish?
404. Is aircraft dope flammable; what safety precautions should be observed when sanding a doped finish?
405. Why is nitrate dope frequently used in the first coats in doping and the finish completed with butyrate dope?
406. Why is fungicidal dope applied thinned (not full-bodied) with a brush?
407. What temperature and humidity levels are considered appropriate for application of a dope finish?
408. What conditions cause blushing of aircraft doped finishes?
409. With what coat of dope are finishing tapes installed?
410. How many coats of dope are usually required to "result in a taut and well-filled finish"?
411. Why is aluminum used as a finishing material in fabric finishing systems?
412. Which sewn fabric seams are permitted?
413. Which sewn fabric seam is considered to be the strongest; how many layers of fabric are used in this seam?
414. How and why is Butyl alcohol used?
415. What does rejuvenator do when sprayed on a doped finish?
416. Which FAA Federal Air Regulation specifies fabric testing as part of a 100-hour or Annual Inspection?
417. What strength criteria are used to define fabric airworthiness?
418. What method of fabric inspection is specified by Federal Air Regulation Part 43 Appendix A?
419. Are the Maule and Seyboth fabric field testers sanctioned by the FAA?
420. How is the Maule aircraft fabric tester used; how is the Seyboth aircraft fabric tester used?
421. Do the Maule and Seyboth fabric field testers actually test fabric tensile strength?
422. What are common causes of organic fabric deterioration?
423. What aircraft storage conditions promote fabric deterioration?
424. Which areas of the aircraft are most susceptible to fabric deterioration?
425. During organic fabric repair, why is sewing completed before removing dope coatings?
426. Is all of the dope coating removed from organic materials for fabric repair?
427. What is the damage limitation for a "baseball stitched" repair?
428. What is the damage limitation for a "sewn patch" repair? When is a "sewn-in panel" repair specified?
429. When is a "doped-in" panel repair specified?
430. When is a "doped-in" patch repair permitted? What sizes are the patches?
431. What is the proper reducing ratio for Polyspray[®]; what is used to reduce Polyspray[®]?
432. Describe the "rejuvenation" of Poly-Fiber[®] finishes.
433. What causes stains on a Poly-Tone finish[®]? How are stains removed?
434. Where is "Uncertified Light" Poly-Fiber[®] fabric specified for use?