

ASSOCIATION OF SURGICAL TECHNOLOGISTS

SURGICAL TECHNOLOGIST CERTIFYING EXAM STUDY GUIDE, 3RD Ed.

PRACTICE EXAM #2: EXPLANATIONS WITH REFERENCES

- 1) A - The Brown-Adson tissue forceps are used during minor procedures to grasp tissue. (ST for ST 414)
- 2) D - The angioscope is used for visualization of the heart and major vessels. (ST for ST 1101)
- 3) B - Resident microbes habitually live in the epidermis, deep in the crevices and folds of the skin. (ST for ST 333)
- 4) A - The Stamey procedure involves suspending the fascial attachments of the bladder to the rectus fascia with sutures placed through a Stamey needle. (ST for ST 853)
- 5) A - Sclerotherapy is the injection of sodium chloride, dextrose or saline solution into the small varicosities to destroy the lumen. (B&K 582; 966)
- 6) C - There are many anatomical triangles throughout the body to aid the surgeon and surgical team in describing the location of a pathology; a direct hernia presents through Hesselbach's triangle. (ST for ST 422)
- 7) B - The sequence of actions completed by the surgical technologist is remove outer pair of sterile gloves, remove drapes, remove gown and gloves, don pair of non-sterile gloves, assist with immediate postoperative care of the patient, breakdown the Mayo stand and backtable. (ST for ST 389-391)
- 8) B - Prior to opening sterile supplies for the first case of the day the O.R. furniture, equipment, surfaces and lights should be wiped down (also referred to as "damp dusting") with a disinfectant solution. (ST for ST 145-146)
- 9) C - The autonomic nervous system (ANS) conducts impulses to the cardiac muscles. (Anatomy 570)
- 10) A - Oophor/o is the root word for ovary. (Med Term 544)
- 11) D - When a vascular anastomosis is being performed it requires the ability to heal and have a long term, secure anastomosis; therefore, absorbable suture would not be used. (ST for ST 296)
- 12) D - Before the incision is made in the uterus, the bladder is dissected free from the uterus and retracted inferiorly. (ST for ST 527)
- 13) B - Aseptic means without sepsis or no pathogens are present. (ST for ST 140)

- 14) A - The Sims uterine curettes have sharp ends that are graduated in size used during a D&C to obtain endocervical and endometrial tissue specimens. (ST for ST 516; 559)
- 15) C - Prior to positioning the patient undergoing a posterior lumbar laminectomy, endotracheal intubation is completed. (ST for ST 366)
- 16) D - The Pennington clamp may be used by a surgeon to grasp a hemorrhoid for excision or a small piece of the lung during a segmental resection. (ST for ST 414)
- 17) C - Cholesteatoma is a benign tumor that invades the mastoid cavity and destroys the mastoid air cells and can also damage the ossicles. (ST for ST 641)
- 18) B - The needle holder is clamped approximately one-third of the distance from the needle point. (ST for ST 305)
- 19) D - Rigid bronchoscopy is usually performed for the removal of foreign objects from the airway of children. (ST for ST 1010)
- 20) C - 96% of the body's mass is made up of oxygen, carbon, hydrogen and nitrogen. (Physiology 34)
- 21) A - The Bailey rib contractor is positioned over two ribs and tightened to bring them together to facilitate suturing. (ST for ST 1002)
- 22) C - The gastrocnemius is the muscle that forms the bulk of the upper calf. (Anatomy 398)
- 23) D - Thrombin should be immediately used when reconstituted with saline or discarded if not used within several hours because it loses potency. (ST for ST 229)
- 24) B - The functions of the small intestine are digestion and absorption. (Physiology 697)
- 25) A - Teeth are composed of dentin, a calcified connective tissue. (Anatomy 791)
- 26) C - The principles that govern the movement of electrons is the electron theory that serves as the basis for the design of all types of electrical equipment. (ST for ST 107)
- 27) B - To aid in controlling gastric secretions a vagotomy is performed. (ST for ST 434)
- 28) B - The patient most likely is experiencing an obstructed bowel due to the formation of postoperative adhesions. (ST for ST 450)
- 29) B - The head of the pancreas shares the same arterial supply with the duodenum. Since the Whipple procedure is performed for cancer of the head of the pancreas, the duodenum must be removed. (ST for ST 481)
- 30) A - To facilitate placement of the sutures in the hard palate the surgeon may use a drill with drill bit. (ST for ST 763)

- 31) B - The biceps brachii flexes and supinates the forearm and covers the anterior portion of the upper arm. (Anatomy 363)
- 32) A - Denial is the first stage of the five stages of grief in which the patient doesn't accept what is happening to him/her. (ST for ST 47)
- 33) B - The ureteral catheter stent is implanted to bypass partial or total obstructions of the ureter due to ureteral tumors, calculi or strictures. (Alex 491)
- 34) C - Once exposure is completed the repair of the inferior glenohumeral ligament begins by creating a bony trough on the anterior glenoid rim using a rongeur, curette, curved osteotome or powered shaver with abrader tip. (ST for ST 923)
- 35) A - Parietal cells are glands that are located in the stomach and secrete the digestive juice hydrochloric acid. (Physiology 703)
- 36) A - Electroencephalography is a recording of the electrical activity of the brain used to help diagnose seizure disorders, brain tumors, epilepsy, and injuries to the brain. (ST for ST 408)
- 37) C - The extremity drape has an opening, called a fenestration, for placing over an extremity. (ST for ST 280-281)
- 38) B - The vagina is a tubular, fibromuscular organ lined with mucous membrane. (Anatomy 871)
- 39) C - The ultrasonic scalpel (Harmonic scalpel) uses a single-use titanium blade attached to a handpiece and connected to a generator that causes the blade to move by rapid ultrasonic motion to cut and coagulate. (ST for ST 180)
- 40) C - The balloon-tipped Fogarty catheter is inserted through an arteriotomy to facilitate removal of an embolus. (ST for ST 286)
- 41) B - One of the pressure points of the supine position is the elbows; gel pads or foam should be used for protection. (ST for ST 362)
- 42) C - The layers initially incised during a trabeculectomy procedure is the conjunctiva and Tenon's capsule. (Alex 646)
- 43) B - The surgical technologist should always anticipate strangulated or incarcerated bowel when preparing for an inguinal herniorrhaphy and have the bowel instruments in the room in case a bowel resection has to be performed. (ST for ST 425)
- 44) C - The Lukens tube is connected to the suction system of the bronchoscope to collect the specimens. (ST for ST 672 ; 1009 934)
- 45) D - Steel is the least inert material used as a suture material and is used in the presence of a wound infection. (ST for ST 301)

- 46) D - The Stevens tenotomy scissors are used during delicate procedures such as eye surgery. (ST for ST 602)
- 47) A - The Sims retractor is used most often in gynecologic surgery. (ST for ST 515)
- 48) B - A strangulated hernia occurs when bowel is trapped within the hernia sac and the blood supply is compromised. (ST for ST 421)
- 49) D - When using the McBurney's incision for an appendectomy, the first muscle encountered is the external oblique which is bluntly divided in the direction of its fibers. (ST for ST 419)
- 50) C - The broad, uterosacral, cardinal and broad ligaments maintain the position of the uterus. (Anatomy 861, 869)
- 51) A - A transverse colectomy is the excision of the transverse colon; an upper midline or transverse incision is made. (Alex 347)
- 52) C - The endometrium is the inner layer of the uterus; the abnormal growth and implantation of the tissue on the outside of the uterus is called endometriosis. (Memmler's 499)
- 53) C - An ultrasound is performed to confirm fluid in the peritoneal cavity. (Alex 451)
- 54) C - A fracture table is used to position the patient in supine to reduce the fracture. (ST for ST 940)
- 55) D - The lateral kidney position provides optimal exposure to the retroperitoneal are of the flank for a transverse incision. (ST for ST 368-369)
- 56) A - The correct sequence of instruments when a screw is placed in bone is drill, depth gauge, tap and screw driver; the same sequence is used for placement of all the screws. (ST for ST 715-716)
- 57) C - When blood or pus from a chest injury is not properly drained from the pleural cavity, it coagulates and forms a fibrin layer over the pleura called empyema; decortication is dissection of the fibrin. (ST for ST 1025)
- 58) D - Succinylcholine is the only depolarizing muscle relaxant in use; it acts rapidly but its effects must be allowed to wear off since there is no reversal agent currently available. (Pharm 34*)
- 59) D - A pantaloon hernia refers to the presence of a direct and indirect hernia. (ST for the ST 422)
- 60) B - When placing a patient in the lateral position the lower leg is flexed and the upper leg is straight with a pillow placed between the legs. (ST for ST 369)

- 61) B - The neuroglia are specialized nerve cells that provide support and protection. (Anatomy 574)
- 62) B - A closed system allows complete rebreathing of expired gases; exhaled carbon dioxide is absorbed by soda lime. (B&K 429)
- 63) C - The surgeon is responsible for moving the unsplinted fracture to protect it from further injury when positioning the patient. (B&K 494)
- 64) D - Fluoroscopy may be used to identify the exact location of the urinary stone; therefore, the surgical team should wear a lead apron. (ST for ST 328; 467)
- 65) D - The Yankauer is also referred to as the Tonsil suction tip; the angle of the suction tip makes it ideal for pharyngeal suctioning during a tonsillectomy. (ST for ST 270-271)
- 66) C - Placement of a small pad under the patient's head in the supine position allows the strap muscles to relax and avoids neck strain. (ST for ST 362)
- 67) D - Every time the surgical technologist passes a medication to the surgeon he/she should verbally provide the name of the drug, strength, and amount. (ST for ST 212)
- 68) A - There are several types of bone holding clamps that vary in size; one type is the Dingman that has a single tooth on the end for grasping the bone. (ST for ST 909)
- 69) D - The Satinsky vena cava clamp, also called the Satinsky partial occlusion clamp, is an atraumatic clamp available in various lengths used during major cardiothoracic procedures such as the CABG. (ST for ST 1050)
- 70) D - An absolute requirement of Standard Precautions is the wearing of adequate protective eyewear on all surgical procedures. (ST for ST 91)
- 71) D - Meckel's diverticulum is a congenital diverticulum that presents as a small bulge in the small intestine and can present signs and symptoms that are the same as acute appendicitis. (ST for ST 443)
- 72) C - A double-cuffed tourniquet is used; one cuff is inflated and if it becomes uncomfortable for the patient, the other cuff is inflated and the first deflated. (Pharm 313-315)
- 73) B - A form of liquid medication is an emulsion; the medication is mixed with water and oil and held together by an emulsifier. A common emulsion used in surgery is propofol (Diprivan®). (Pharm 19)
- 74) B - The average normal respiration rate for children (1-7 years of age) is 18-30 per minute. (ST for ST 354)
- 75) B - Angiography is the primary diagnostic procedure performed for the evaluation of peripheral vascular disease. (ST for ST 399)

- 76) C - The mesentery is approximated to aid in keeping the intestine in normal anatomical position in order to prevent herniation and maintain the blood supply. (ST for ST 458)
- 77) C - The Association for the Advancement of Medical Instrumentation recommends that instrument sets should not exceed 25 lbs. (ST for ST 157)
- 78) B - The multi-holed ventricular catheter is placed in the lateral ventricle of the brain. (ST for ST 1163 ; 1165)
- 79) C - Leiomyomas are a type of uterine fibroid that can cause lower abdominal pain, pelvic congestion, menorrhagia, dysmenorrhea and increased fertility. A myomectomy is a surgical procedure performed to remove the fibroids. (ST for ST 540)
- 80) C - The ureters enter the urinary bladder medially from the posterior aspect. (Anatomy 838)
- 81) D - The pathogen that is most commonly associated with the cause of postoperative SSIs is staphylococcus aureus. (ST for ST 145)
- 82) A - The spleen is the number one organ injured during motor vehicle accidents. (ST for ST 75)
- 83) C - The surgeon's preference card lists the supplies, equipment, instrumentation, suture, dressing materials and surgeon's personal preferences for a procedure. (ST for ST 110)
- 84) D - Non-absorbable sutures become encapsulated during the healing process and remain in the tissues for many years. (B&K 554)
- 85) B - Mentoplasty is reconstruction of the chin which can involve placement of a prosthesis. (B&K 858)
- 86) A - Phagocytosis is the engulfment of large particles and is sometimes called cell "eating". (Physiology 858)
- 87) D - The sciatic nerve is a long nerve that extends through the muscles of the thigh, leg, and foot with numerous branches. When a patient is placed in Fowler's (sitting) position adequate padding must be provided to prevent damage to the nerve. (ST for ST 365)
- 88) D - Hair covers are donned first to decrease the possibility of hair shedding onto the scrub suit and decrease microbial shedding. (ST for ST 327)
- 89) C - The vestibulocochlear (VIII) is the cranial nerve that contains special fibers for hearing as well as balance. (Anatomy 623)
- 90) C - Xeroform is a nonpermeable, occlusive dressing made of fine mesh gauze; it is commonly used at the first layer in a three-layer dressing. (ST for ST 283)
- 91) A - Endotoxins cause the overstimulation of coagulating proteins, which causes systemic intravascular clotting that in turn results in tissue necrosis. (B&K 239-240)

- 92) C - Materials that allow the flow of free electrons are called conductors; materials include copper, aluminum, brass, and carbon. (ST for ST 108)
- 93) C - Intra-articular refers to 'within a joint'; therefore, the surgeon will be injecting the local anesthetic inside the joint. (ST for ST 202)
- 94) A - Plethysmography is useful in patients with small arterial vessel disease; it records variations in the amount of blood in an extremity. (ST for ST 1096)
- 95) B - EtO is the most effective sterilizing agent for items that can be eroded or corroded due to being heat and/or moisture sensitive. (ST for ST 96)
- 96) C - The mandible articulates with the temporal bone. (Anatomy 170)
- 97) B - In the supine position crossing the patient's arms across his/her chest causes interference with respirations by tightening the thoracic region and not allowing full expansion of the lungs. (ST for ST 362-363)
- 98) B - Rubber bands, paper clips or tape should not be used to hold items together inside a peel pack; the binding material prevents the sterilizing agent from making contact. (ST for ST 156)
- 99) B - $98.6 - 32 = 66.6$; $66.6 \div 1.8 = 37^\circ \text{C}$ (Pharm 76)
- 100) A - Instruments with multiple parts, such as the Balfour retractor, should be disassembled when breaking down the back table and Mayo stand. (ST for ST 148)
- 101) A - An example of a short bone are the carpal bones of the wrist; the exception is the pisiform which is a sesamoid bone. (Anatomy 141)
- 102) B - Third intention or delayed primary closure heals by contraction, granulation and connective tissue repair. (ST for ST 293)
- 103) B - The first step in the decontamination process begins at the point of use in the O.R. The surgical technologist is responsible for presoaking the instruments in a container of either sterile water, enzymatic or detergent solution. (ST for ST 148)
- 104) C - An enzyme solution is best since it removes moistened and dried debris without requiring mechanical action. (ST for ST 149)
- 105) D - PTFE is nonabsorbable and should not be used when an infection is present. (ST for ST 319)
- 106) A - Sterile packages can be placed inside a protective plastic wrap/bag called a dust cover to provide additional barrier protection. (ST for ST 157)

107) A - The diagonal stripes on the steam autoclave tape and the stripe on the chemical indicator strip should change to black when exposed to the steam sterilization parameters. (ST for ST 165)

108) B - The Lowman bone holding clamp, nicknamed "turkey claw", is used for grasping medium sized bones such as the radius and ulna to reduce a fracture and hold in place. (Alex 759)

109) B - The renal vein of the donor kidney is attached to the external iliac vein by an end-to-side anastomosis. (ST for ST 837)

110) B - Orchiopexy is performed to treat testicular torsion, position a retracted testicle or undescended testicle. (ST for ST 873)

111) D - The incision is made in the inferior posterior portion of the tympanic membrane with a disposable myringotomy knife. (ST for ST 636)

112) A - The inner layer of the dressing covers the wound completely and remains in contact; a non-permeable dressing is a fine mesh gauze that is impregnated with an emulsion; examples are Vaseline Gauze and Xeroform Gauze. (ST for ST 283)

113) A - A straight, curved or angled aneurysm clip is placed across the neck of the aneurysm. (ST for ST 1156)

114) A - OU (oculus uterque) is the abbreviation for both eyes and atropine sulfate is a commonly used mydriatic drug that dilates the pupil; it is instilled preoperatively for cataract surgery. (Med Term 534; ST for ST 223)

115) A - The patient's request should be fulfilled; refusal of the request can cause anxiety and irritation in the patient who needs reassurance from the clergy person. (ST for ST 348)

116) B - If cultures are not immediately transported to the pathology department they should be placed in a refrigerator. (B&K 389)

117) B - A fomite is an inanimate object that is not in itself harmful, but that is able to harbor pathogenic organisms, thus serving as an agent for transmission of infection. (ST for ST 141)

118) A - The patient is placed in supine position with a bolster placed under the right side to prevent excessive pressure on the inferior vena cava. (ST for ST 525)

119) B - The conducting fibers that run from the atrioventricular (AV) node down the interventricular septum is referred to as the bundle of His. (Anatomy 471)

120) D - Items that do not allow the passage of X-rays are referred to as being radiopaque; examples include contrast media and the radiopaque strip on sterile sponges. (ST for ST 281 ; B&K 390)

121) B - At teaching health care facilities where surgical technology students complete rotation, CSTs who have an interest in teaching and working with adult learners serve in the preceptor role. (B&K 84) no change

122) B - A sterile Doppler probe will be used to identify the superior and inferior epigastric arteries; the superior vessels must be preserved. (ST for ST 792)

123) B - Rubber or silastic items should not be folded, tightly rolled or placed in a mound because steam will either not penetrate or displace the air. The Esmarch bandage should be loosely rolled with a layer of Webril in-between. (B&K 313)

124) C - The correct order of the four layers of the colon are mucosa, submucosa, muscularis, serosa. (ST for ST 452)

125) D - Dead space is the space caused by separation of wound edges and leads to the accumulation of air or fluid which can then lead to a surgical site infection. (ST for ST 292)

126) C - The first step in opening a sterile package is to open the first flap away from the body, side flaps next and last flap towards body. (ST for ST 332)

127) D - The patient is positioned supine with the head slightly turned away from the effected side for a unilateral frontotemporal approach. (ST for ST 1142)

128) C - Ties are loaded onto long right angle clamps to facilitate placing the ties around vessels. (ST for ST 488)

129) C - The pH level of a solution or other liquid such as blood refers to its acidity versus alkalinity levels. (Memmler's 25)

130) D - The surgeon usually uses a #11 knife blade to make the initial stab incision for placement of the trocars. (ST for ST 960)

131) C - Phagocytic white blood cells engulf and destroy bacteria. (Physiology 81)

132) B - There are several negative body language signals that should be avoided when communicating with patients, patient's family members, peers and the public including tightly folded arms, distancing oneself from patient, frowning, and tapping fingers or foot. (ST for ST 17)

133) D - H2 blockers, such as cimetidine, ranitidine and sodium citrate, inhibit hydrochloric acid secretion in the stomach or neutralize stomach acid. (ST for ST 219)

134) A - The religious values and standards of Jehovah's Witness should be recognized and upheld by the surgery team including no transfusion of blood. There are other blood replacement products available. (ST for ST 51)

135) D - $3:5=9:x$; $3/5 = 9/x$; $9x5 = 3x$; $45=3x$; $15=x$ (Pharm 74)

- 136) B - The O'Sullivan-O'Connor self-retaining retractor is commonly used during total abdominal hysterectomy. (ST for ST 568)
- 137) A - To facilitate placement of the sutures in the prostatic fossa to control bleeding and reconstruct the bladder outlet the surgeon may use a Heaney needle holder. (ST for ST 867)
- 138) D - The osteophytes are removed with a Kerrison rongeur. (ST for ST 977)
- 139) D - A subcuticular closure is often used during plastic surgery procedures; the technique minimizes scarring. (ST for ST 310)
- 140) B - The fibula is commonly used to obtain a composite graft to reconstruct the mandible. (ST for ST 691)
- 141) D - When the drill or saw is being used it produces heat which can char and destroy the bone; a suction irrigator is used by the surgical technologist to prevent the heat build-up. (ST for ST 643)
- 142) A - The classic signs of inflammation are pain, heat, redness, swelling and loss of function in reaction to injured tissues. (ST for ST 291)
- 143) D - The Babcock clamp is the primary atraumatic instrument for grasping the appendix during an appendectomy. (ST for ST 449)
- 144) B - The inner layer of the uterus is the endometrium; the outer layer is the perimetrium and middle layer is the myometrium. (Anatomy 870)
- 145) C - Liquid collodian is a type of chemical dressing that is applied to the wound and dries forming a seal; it is often used for pediatric procedures. (ST for ST 283)
- 146) B - There are certain instances when the initial count and possibly subsequent counts may be omitted. Two examples are emergency cesarean section and ruptured abdominal aortic aneurysm. (ST for ST 347)
- 147) B - When needlestick occur the surgical technologist should immediately remove the needle from the sterile field. (ST for ST 92-93)
- 148) B - The thyroid drape is approximately the same size as a laparotomy drape and has a transverse fenestration. (B&K 520)
- 149) B - The cells of Leydig are specialized cells that secrete the male hormone testosterone. (Physiology 929)
- 150) B - The surgeon usually divides the rectus sheath and muscle with electrosurgery. (ST for ST 420)

151) D - The patient skin prep is level of umbilicus to the foot including the hip region and entire circumference of the leg and entire foot. (ST for ST 944)

152) D - The skin prep boundaries are nipple line to symphysis pubis and often extended to mid thigh and bilaterally. (ST for ST 423)

153) B - Clean scrub attire is worn to protect the patient and surgery staff by limiting the spread of microbes. (ST for ST 326)

154) D - Most substances are not absorbed into the blood from the stomach; the absorption takes place in the small intestine. However, some substances that are absorbed from the stomach are water, electrolytes, some drugs and alcohol. (Memmler's 441)

155) B - When applying sterile technique the drape should be removed and a new drape placed. (ST for ST 377)

156) D - The TA linear stapling device is best used for dividing the esophagus for removal. (ST for ST 318)

157) A - Demyelination can occur when a patient is undergoing radiation therapy and/or chemotherapy for cancer treatment. (Anatomy 577)

158) A - A Gigli saw may be used by the surgeon to cut the cranium between the bur holes during a craniotomy. (ST for ST 1137)

159) C - The Argyle and Javid are two types of shunts used during a carotid endarterectomy. (ST for ST 1110)

160) B - Polypropylene is the suture material of choice as a substitute for stainless steel where strength and nonreactivity is required, but stainless steel is not appropriate for use in the tissue. (ST for ST 301)

161) D - *B. atrophaeus* in spore form is placed within the EtO BI. (ST for ST 168)

162) D - The suffix -itis means inflammation such as appendicitis. (Med Term 543)

163) A - As much air as possible should be forced out of the peel pack to prevent bulging and rupture during the sterilization cycle. (ST for ST 156)

164) B - Bridges are plastic devices that are placed over the incision like a bridge; retention sutures are brought through holes in the bridge and tied in the middle. (ST for ST 314)

165) B - To reestablish blood flow and reoxygenate the heart muscle, the saphenous vein or internal mammary artery is sutured to the coronary artery to bypass the obstruction. (ST for ST 1049)

- 166) D - A Kerrison rongeur is used to excise the lamina followed by the pituitary rongeurs to remove disk material. (ST for ST 1176)
- 167) B - The Hibbs and Hohmann retractors are used in large orthopedic surgical procedures. (ST for ST 909)
- 168) C - The T-tube is used for insertion into the common bile duct to facilitate bile drainage; one arm of the "T" is placed distally and the other arm placed proximally. (ST for ST 287)
- 169) B - The reverse Trendelenburg (head up) position requires the use of a padded footboard to keep the patient from sliding off the O.R. table. (ST for ST 364)
- 170) D - The inner lining of the GI tract is composed of epithelium. (Anatomy 782)
- 171) D - The inner peel pack should not be sealed or folded to prevent the entrapment of air during sterilization. (ST for ST 156)
- 172) A - If a surgeon performs surgery without having obtained a signed consent by the patient, the commission of battery has occurred. (ST for ST 29)
- 173) D - Spores are a form assumed by bacilli in order to survive adverse conditions; in this form they are the most difficult microorganism to be destroyed by methods of sterilization. (ST for ST 141)
- 174) A - Patient burns are usually considered an unintentional tort or in other words, an error that is reported as an adverse patient incident. (ST for ST 30)
- 175) A - Polytetrafluoroethylene (PTFE) is a non-absorbable flexible material that is used for grafting during a AAA; it does not require preclotting. (ST for ST 319, 1115)