All. 3

GESTIONE – MANUTENZIONE- SICUREZZA

1. Quale è la normativa di riferimento in tema di sicurezza delle apparecchiature elettromedicali?

2. Cosa si intende per procedura di collaudo di un elettromedicale e a quale normativa si fa riferimento

3. Manutenzione preventiva di un'apparecchiatura: normativa, esempi e peculiarità

4. Cosa sono IQ, OQ e PQ in tema di qualità ed apparecchiature elettromedicali?

5. Come applicare l'analisi del rischio per le apparecchiature elettromedicali. Esempi.

6. La "convalida" di un'apparecchiatura elettromedicale: è sempre necessaria e quale è la normativa di riferimento?

7. Quali sono le criticità riferite a privacy e sistemi elettromedicali?

8. Regolamento dei dispositivi medici: riferimenti legislativi e novità.

9. Verifica di sicurezza elettrica: responsabilità e riferimenti legislativi.

10. Consumabili di un'apparecchiatura elettromedicale: cosa dice la Norma in tema di gestione della Qualità

11. Definizione di apparecchiatura elettromedicale/biomedicale

PIANIFICAZIONE E ACQUISTI

1. Pianificazione acquisto delle apparecchiature elettromedicali: quali sono le procedure nella PA
2. Cosa comprende il capitolato generale /disciplinare di gara
3. Cosa comprende il capitolato speciale/capitolato tecnico
4. Cosa è un'indagine di mercato o bando esplorativo per la PA?
5. Interfacciamenti tra sistemi elettromedicali e sistemi informatci gestionali: quando e perché
6. Il benchmark negli acquisti delle apparecchiature elettromedicali: esempi di strumenti elettromedicali e quali valori considerare
7. Che cos'è il MePa, come funziona e quando può essere utilizzato
8. Acquisti sopra e sottosoglia
9. Quali sono le competenze del RUP?
10. Quali sono le competenze del DEC?
11. Cosa si intende per gara basata sull'offerta economicamente più vantaggiosa e quando è obbligatorio utilizzarla

All. 4

1. Che cos'è una memoria RAM?

2. Che cos'è una memoria di massa?

3. Quali sono gli elementi hardware fondamentali di un sistema PC?

4. Qual è la differenza tra HDD allo stato solido ed uno magnetico?

5. Quali sono le periferiche di input e quali quelle di output?

6. Quali sono i "livelli" fondamentali di un'applicazione software?

7. Qual è la differenza tra architetture a 16, 32, 64 bit?

8. Quali sono i parametri più comuni che caratterizzano le prestazioni di un PC?

9. Quali sono gli standard più comuni per l'interconnessione tra i vari componenti che caratterizzano un PC?

10. Quali sono gli standard più comuni di connessione in rete di un PC?

11. Quali sono i parametri che caratterizzano la qualità grafica di un PC?

All. 5

1. Biomedical engineering (BME) or medical engineering is the application of engineering principles and design concepts to medicine and biology for healthcare purposes (e.g., diagnostic or therapeutic). BME is also traditionally known as "bioengineering", but this term has come to also refer to biological engineering.
2. This field seeks to close the gap between engineering and medicine, combining the design and problem solving skills of engineering with medical biological sciences to advance health care treatment, including diagnosis, monitoring, and therapy.[1][2] Also included under the scope of a biomedical engineer is the management of current medical equipment within hospitals while adhering to relevant industry standards.
3. This involves making equipment recommendations, procurement, routine testing and preventive maintenance, a role also known as a Biomedical Equipment Technician (BMET) or as clinical engineering. Biomedical engineering has recently emerged as its own study, as compared to many other engineering fields.
4. Such an evolution is common as a new field transitions from being an interdisciplinary specialization among already-established fields, to being considered a field in itself. Much of the work in biomedical engineering consists of research and development, spanning a broad array of subfields (see below). Prominent biomedical engineering applications include the development of biocompatible prostheses, various diagnostic and therapeutic medical devices ranging from clinical equipment to micro-implants, common imaging equipment such as MRIs and EKG/ECGs, regenerative tissue growth, pharmaceutical drugs and therapeutic biologicals.
5. Medical devices. This is an extremely broad category—essentially covering all health care products that do not achieve their intended results through predominantly chemical (e.g., pharmaceuticals) or biological (e.g., vaccines) means, and do not involve metabolism. A medical device is intended for use in: the diagnosis of disease or other conditions in the cure, mitigation, treatment, or prevention of disease.
6. Some examples include pacemakers, infusion pumps, the heart-lung machine, dialysis machines, artificial organs, implants, artificial limbs, corrective lenses, cochlear implants, ocular prosthetics, facial prosthetics, somato prosthetics, and dental implants. Stereolithography is a practical example of medical modeling being used to create physical objects. Beyond modeling organs and the human body, emerging engineering techniques are also currently used in the research and development of new devices for innovative therapies,[10] treatments,[11] patient monitoring,[12] of complex diseases.
7. Medical/biomedical imaging is a major segment of medical devices. This area deals with enabling clinicians to directly or indirectly "view" things not visible in plain sight (such as due to their size, and/or location). This can involve utilizing ultrasound, magnetism, UV, radiology, and other means. An MRI scan of a human head, an example of a biomedical engineering application of electrical engineering to diagnostic imaging. Click here to view an animated sequence of slices.
8. Imaging technologies are often essential to medical diagnosis, and are typically the most complex equipment found in a hospital including: fluoroscopy, magnetic resonance imaging (MRI), nuclear medicine, positron emission tomography (PET), PET-CT scans, projection radiography such as X-rays and CT scans, tomography, ultrasound, optical microscopy, and electron microscopy.
9. An implant is a kind of medical device made to replace and act as a missing biological structure (as compared with a transplant, which indicates transplanted biomedical tissue). The surface of implants that contact the body might be made of a biomedical material such

as titanium, silicone or apatite depending on what is the most functional. In some cases, implants contain electronics, e.g. artificial pacemakers and cochlear implants. Some implants are bioactive, such as subcutaneous drug delivery devices in the form of implantable pills or drug-eluting stents.

10. In recent years biomedical sensors based in microwave technology have gained more attention. Different sensors can be manufactured for specific uses in both diagnosing and monitoring disease conditions, for example microwave sensors can be used as a complementary technique to X-ray to monitor lower extremity trauma.[13] The sensor monitor the dielectric properties and can thus notice change in tissue (bone, muscle, fat etc.) under the skin so when measuring at different times during the healing process the response from the sensor will change as the trauma heals.
11. Clinical engineering is the branch of biomedical engineering dealing with the actual implementation of medical equipment and technologies in hospitals or other clinical settings. Major roles of clinical engineers include training and supervising biomedical equipment technicians (BMETs), selecting technological products/services and logistically managing their implementation, working with governmental regulators on inspections/audits, and serving as technological consultants for other hospital staff (e.g. physicians, administrators, I.T., etc.). Clinical engineers also advise and collaborate with medical device producers regarding prospective design improvements based on clinical experiences, as well as monitor the progression of the state of the art so as to redirect procurement patterns accordingly.