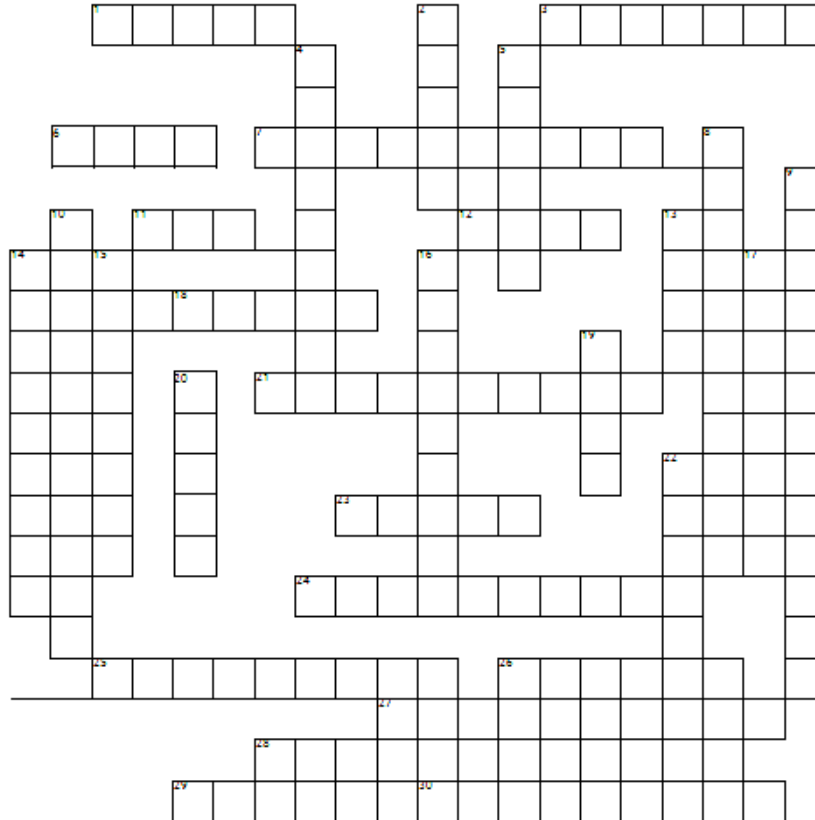


CROSSWORDS



Across

1. Reduce something to small particles or powder by crushing it
3. The act or an instance of inspecting or testing something
6. A narrow part of something, resembling in shape or position
7. The center of a building plan
11. Engineering Change order - documentation packet outlines
12. 500 sheets of paper
18. A point or level beyond which something does or may not extend or pass; a restriction on the size or amount of something permissible or possible
21. Establishes a connection between a graphical representation or an item and some text
23. A hand tool, power tool, or machine with a rotating cutting tip or reciprocating hammer of chisel
24. A drawing or sketch restricted to a line without shaded or modeling of form
25. A slope from the horizontal or vertical in carpentry or stonework
26. make the surface of something smooth and shiny by rubbing it
27. Used to represent surfaces that are not directly visible or modeling of form
28. Creates the first tolerance value in the feature control frame
29. Forming an essential foundation or starting point
30. The amount of something that is permitted, especially within a set of regulations or for a specified purpose

Innovations by the Faculty in Teaching and Learning

Down

2. A slope from the horizontal or vertical in carpentry or stonework
4. A break in an object
5. Inside a corner of a part
8. Boundary line of a section, or parallel lines placed on the cut surfaces of section views
9. A light line that extends from the edge or end of a main object
10. Lines that are made visible as dots or dashes to reveal the edges of objects currently hidden from view
13. Make a hole in something, especially with a revolving tool
14. Heating and cooling of a metal or alloy to obtain desired properties or conditions
15. One or more printed sheets showing a manufacturer's parts or assemblies of an end item by illustration
16. Standard length or measurement of a piece of paper for drafting industry
17. Object to create a part
19. American National Standard Institute
20. An outside corner which is curved on the part
22. Used to represent the surfaces that are not directly visible or modeling of form.

Peer Group Learning

Name of the subject: Thermal Engineering

Objective: To improve the performance of slow and average learner students, the peer groups are formed with each group consisting of 8 students in which two are advanced, two are average and four are slow learners.



Peer group learning

Outcomes: *Slow learner students got cleared their doubts and they felt easy to understand the concept and they shown more interest to study when they are formed*

MULTIPLE CHOICE QUESTIONS

Name of the subject: POWER PLANT ENGINEERING

Objective: To enhance the knowledge of the subject through multiple choice Questions.

1. The efficiency of a nuclear power plant in comparison to a conventional thermal power plant is

- (a) same
- (b) more
- (c) less
- (d) may be less or more depending on size
- (e) unpredictable.

2. Isotopes of same elements have

- (a) same atomic number and different masses
- (b) same chemical properties but different atomic numbers
- (c) different masses and different atomic numbers
- (d) different chemical properties and same atomic numbers
- (e) same chemical properties and same atomic numbers.

3. Atomic number of an element in the periodic table represents the numbers of

- (a) protons in the nucleus
- (b) electrons in the nucleus
- (c) neutrons in the nucleus
- (d) electrons in the atom
- (e) neutrons in the atom.

4. The mass number of a substance represents the sum of total number of

- (a) protons and neutrons in an atom
- (b) protons and electrons in an atom
- (c) neutrons and electrons in an atom
- (d) protons and neutrons in a nucleus
- (e) protons and electrons in a nucleus.

5. Which is not identical for an atom and an isotope

- (a) mass number
- (b) atomic number
- (c) chemical properties
- (d) position in periodic table
- (e) all of the above.

6. Amongst the following, the fissionable materials are

- (a) U233 and Pu239
- (b) U235 and Pu233
- (c) U235 and Pu235
- (d) U238 and Pu239
- (e) U243 and Pu235

6. A nuclear unit becoming critical means

- (a) it is generating power to rated capacity
- (b) it is capable of generating much more than rated capacity
- (c) there is danger of nuclear spread
- (d) chain reaction that causes automatic splitting of the fuel nuclei has been established
- (e) it generates no heat.

7. Moderator in nuclear plants is used to

- (a) reduce temperature
- (b) extract heat from nuclear reaction
- (c) control the reaction
- (d) cause collision with the fast moving neutrons to reduce their speed
- (e) moderate the radioactive pollution.

8. The most commonly used moderator in nuclear plants is

- (a) heavy water
- (b) concrete and bricks
- (c) graphite and concrete
- (d) deuterium
- (e) graphite.

9. The nuclear energy is measured as

- (a) MeV
- (b) curie
- (c) farads
- (d) MW
- (e) kWhr.

10. The total energy released in fission of U is

- (a) 5 MeV
- (b) 10 MeV
- (c) 199 MeV
- (d) 168 MeV
- (e) 11 MeV.

11. Breeder reactor has a conversion ratio of

- (a) unity
- (b) more than unity
- (c) less than unity
- (d) zero
- (e) infinity.

12. Boiling water reactor employs

- (a) boiler
- (b) direct cycle of coolant system
- (c) double circuit system of coolant cycle
- (d) multi pass system
- (e) single circuit system.

13. Fast breeder reactor uses

- (a) boiler
- (b) direct cycle of coolant system
- (c) double circuit system of coolant cycle
- (d) multi pass system
- (e) single circuit system.

14. One gram of uranium will produce energy equivalent to approximately

- (a) 1 tonne of high grade coal
- (b) 4.5 tonnes of high grade coal
- (c) 10 tonnes of high grade coal
- (d) 100 tonnes of high grade coal
- (e) 1000 tonnes of high grade coal.

15. Which of the following nuclear reactor does not need a heat exchanger for generation of steam

- (a) gas cooled
- (b) liquid metal cooled
- (c) pressurised water
- (d) boiling water
- (e) none of the above.

QUIZ

Objective: Quiz is conducted not only to test the person knowledge but also to test the speed of a person's brain and how active it a person can think in a given particular situation.

Theme: "ENGINEERING TOWARDS INDUSTRY 4.0"



JUDGES ACCESING THE EVENT



QUESTIONS PROJECTED TO THE STUDENTS

Outcome:

- ✓ Retrieval aids later retention. There is clear evidence from psychological experiments that practicing retrieval of something after learning it, for instance by taking a quiz or test, makes you more likely to retain it for the long term
- ✓ Identifies gaps in knowledge.
- ✓ Causes students to learn more from the next study episode. Essentially it reduces forgetting which makes the next related study area more productive.
- ✓ Produces better organization of knowledge by helping the brain organize material in clusters to allow better retrieval.
- ✓ Improves transfer of knowledge to new contexts. There are several experiments referenced in the paper where tests and quizzes help transfer and application of knowledge.

PAPER PRESENTATION

Objective: A presentation is a means of communication which can be adapted to various speaking situations, such as talking to a group, addressing a meeting or briefing a team. To be effective, step-by-step preparation and the method and means of presenting the information should be carefully considered. This program will not only exhibit student's technical skill along with managerial ability which is need for the growth of one's own professional and personal ability.



STUDENTS PRESENTING ON RECENT ADVANCEMENTS ON **ATV**



FACULTIES ACCESSING STUDENTS PERFORMACE

Outcomes:-

- ✓ Plan their presentation by gathering relevant information, determining audience needs, and defining presentation purpose
- ✓ Organize the presentation using the concepts of ordering and determining the central, main and supporting ideas; Develop the introduction and conclusion of the presentation
- ✓ Identify the benefits and uses of visual aids
- ✓ Apply the various media choices for displaying data and enhancing the presentation
- ✓ Use effective verbal and non-verbal techniques when making a presentation
- ✓ Reduce their stress when making a presentation
- ✓ Effectively field questions and elicit feedback from the audience
- ✓ Gain feedback from peers and the trainer that will identify strengths and areas for improvement.

Pre Reading Materials

Model Name of the subject: Thermal Engineering.

Topic: Port and valve timing 2 stroke and 4 stroke engine

Objective: To enhance the interest towards the subject.



Description: 1st stroke (Upward stroke):

1st stroke: The piston is at the bottom of the cylinder. A pipe at the left side is opened and lets the fuel mixture, which is already compressed a bit, flow from the lower to the upper part of the cylinder. The fresh gases expulse now the exhaust through an ejection pipe, which is not closed by the piston at this moment.

2nd stroke (Downward stroke):

2nd stroke: After being hurried upward, the piston now covers the pipe on the left side and the ejection pipe. Because there is no way out any more, the upper, fresh gas mixture gets compressed now. At the same time in the part below fresh gas is taken in by the piston driving upward through the open suction pipe. At the upper dead- center, the compressed fuel mixture is ignited by the sparking plug, the piston is pressed downward while he compresses at the same time the fresh gas below. The process begins again as soon as the piston arrives at its lowest point.

Four Stroke Engine

Today, internal combustion engines in cars, trucks, motorcycles, aircraft, construction machinery and many others, most commonly use a four stroke cycle. The four strokes refer to intake, compression, combustion (power), and exhaust strokes that occur during two crankshaft rotations per working cycle of the Gasoline engine and Diesel engine.

The cycle begins at top dead center (TDC), when the piston is farthest away from the axis of the crankshaft. On the intake or induction stroke of the piston, the piston descends from the top of the cylinder, reducing the pressure inside the cylinder. A mixture of fuel and air is forced (by atmospheric or greater pressure) into the cylinder through the intake (inlet) port. The intake (inlet) valve (or valves) then close(s), and the compression stroke compresses the fuel-air mixture.

The air-fuel mixture is then ignited near the end of the compression stroke, usually by a spark plug (for a gasoline or Otto cycle engine) or by the heat and pressure of compression (for a Diesel cycle or compression ignition engine). The resulting pressure of burning gases pushes the piston through the power stroke. In the exhaust stroke, the piston pushes the products of combustion from the cylinder through an exhaust valve or valves.

Outcomes: *Students learnt the theoretical and experimental of valve timing diagrams.*

Concept of the Day

Objective: It is a technical forum for the students and faculty members to upgrade their technical skills.



Outcomes: *Students and faculties learnt more new trending concepts in and around in the area of Engineering.*

E-Learning

Objective: Online courses available for faculties and students to upgrade their knowledge in the latest technology with real time applications.



THORS ACADEMY CERTIFICATE OF FACULTY



THORS ACADEMY CERTIFICATE OF FACULTY

WORKSHOP

Objective: The goal of the workshop is to equip the participants with relevant knowledge and skills for conducting and applying Monitoring and Evaluation and ultimately improve the performance of their Development Projects, Program and Organizations.



WORKSHOP ON RESEARCH AND DEVELOPMENT



WORKSHOP ON 3D PRINTING AND REVERSE ENGINEERING

STUDENT EXCHANGE PROGRAM

Objective: Exchange of students between national and international level 100+ students every semester. In this initiative student gets benefited in terms of technology, knowledge and cultural exchange within India and abroad.



Students of CIT in Japan



Students of CIT in C M R
College of Engineering and Technology



Students from Shreeyash
College of Engineering and Technology,
Aurangabad, in Kuka Robotics training



Students from
Malaysia, in 3D Printing Lab

COMPETITION

Objective: Competitions are conducted to improve the knowledge and hands on experience of recent design and manufacturing techniques among the students in an enthusiastic way.



SAE-SUPRA –F1 CAR MANUFACTURING AND RACING COMPETITION



SAE-BAJA AND E-BAJA ATV VEHICLE MANUFACTURING AND RACING COMPETITION



ISVC- SOLAR VEHICLE MANUFACTURING AND RACING COMPETITION

SELF LEARNING

Objective: Toppers given freedom to study the subject of their interest on their own and their timing and efficiency is effectively utilized at Innovative Learning Centre to learn the technology updates by working with industrial projects, to participate in various national and international competitions, incubation cell, and attending internships. Other students given the opportunity to make the presentations of various applications of the subject or content beyond the syllabus , develop the model / charts / projects related to their subject of interest.



STUDENT MAKING PROJECTS IN INNOVATIVE LEARNING PROGRAM



STUDENT MAKING GROUP PROJECTS IN INNOVATIVE LEARNING PROGRAM

DESIGN

Objective: To improvise students in the emerging areas of design by imparting recent technologies and advanced software's that are adapted in industries and research purpose with the help of advanced training facilities and expertise faculties to meet the global needs of society and industries.



STUDENTS GETTING TRAINED IN CAD, CAM AND CAE

ROBOTICS AND AUTOMATION

Objective: As the world moving towards automation that can't be achieved without robotics, the next generation of industries is INDUSTRY 4.0 in this advanced era classroom teaching is not enough to fulfill the industry expectations. To overcome this scenario we have erected the ROBOTICS & AUTOMATION facility where students molded as industry ready.



STUDENTS GETTING TRAINED ROBOTICS



STUDENTS GETTING HANDS ON TRAINING IN AUTOMATION PROCESS

3D PRINTING AND REVERSE ENGINEERING

Objective: It all starts with the creation of a 3D model in your computer. This digital design is for instance a CAD (Computer Aided Design) file. A 3D model is either created from the ground up with 3D modeling software or based on data generated with a 3D scanner. With a 3D scanner you're able to create a digital copy of an object. With these advanced manufacturing techniques students can achieve greater results in manufacturing era.



STUDENTS GETTING HANDS ON TRAINING IN 3D PRINTING TECHNOLOGY