



# UPPSC-AE 2024 Solutions

## Engineering Aptitude

**Questions & Answer Keys**

**Exam held on 20-04-2025**

**Delhi Centre :** 44-A/1, Kalu Sarai, Near Hauz Khas Metro Station, New Delhi-110016 • Ph: 9021300500

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**Q.1** Who invited Mahatma Gandhi to Champaran regarding the Indigo cultivation?

- (a) J.B. Kripalani (b) Rajendra Prasad  
(c) Rajkumar Shukla (d) Motilal Nehru

**Ans. (c)**

End of Solution

**Q.2** Which King's title was 'The man with burnt legs'?

- (a) Karikalan (b) Nalangiri  
(c) Nedul Jeral (d) Duttagamani

**Ans. (a)**

End of Solution

**Q.3** Match List-I with List-II and choose the correct answer from the codes given below the lists:

**List-I (Inscription)**

- A. Hathigumpha Inscription  
B. Mandsaur Inscription  
C. Aihole Inscription  
D. Nasik Cave Inscription

**List-II (Ruler)**

1. Kharavela  
2. Puluvami  
3. Pulakeshin II  
4. Yashodharman

**Codes:**

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 3 | 2 | 4 | 1 |
| (b) | 2 | 3 | 4 | 4 |
| (c) | 1 | 4 | 3 | 2 |
| (d) | 4 | 3 | 2 | 1 |

**Ans. (c)**

End of Solution

**Q.4** Article 17 of the Indian Constitution is related to :

- (a) End of Titles (b) Abolition of Untouchability  
(c) Equality before Law (d) Freedom of Press

**Ans. (b)**

End of Solution

**Q.5** Which one of the following is correctly matched?

**(Painter)**

- (a) Manohar  
(b) Daswant  
(c) Fakirullah  
(d) Basawan

**(Ruler)**

- Akbar  
Jahangir  
Shahjahan  
Aurangzeb

**Ans. (c)**

End of Solution

**Q.6** Khond Movement (1846-55) was triggered due to the British Government's forceful abolition of which traditional practice of tribes ?

- (a) Infant Sacrifice (b) Human Sacrifice  
(c) Animal Sacrifice (d) None of the above

**Ans. (b)**

End of Solution

**Q.7** In which Articles of the Constitution of India have the provisions related to the electoral process of the country been made?

- (a) Articles 324 to 329 (b) Articles 333 to 334  
(c) Articles 334 to 339 (d) Articles 329 to 344

**Ans. (a)**

End of Solution

**Q.8** In which year did the Indian industrialist Ratan Tata, who expired in the year 2024, receive the "Padma Vibhushan Award"?

- (a) 2002 (b) 2008  
(c) 2012 (d) 2014

**Ans. (b)**

End of Solution

**Q.9** What is the minimum educational qualification for "Uttar Pradesh Mukhyamantri Yuva Udyami Vikas Abhiyan Yojana" launched in 2024 ?

- (a) Class 5th (b) Class 8th  
(c) Class 10th (d) Class 12th

**Ans. (b)**

End of Solution

**Q.10** Which country honoured the Prime Minister of India with "The Order of Excellence" in 2024?

- (a) Guyana (b) France  
(c) Russia (d) Egypt

**Ans. (a)**

End of Solution

**Q.11** The Indian government had launched a rescue -operation in Ukraine to evacuate its stranded citizens.

This operation was known as:

- (a) Operation Devi Shakti (b) Operation Ganga  
(c) Operation Kaveri (d) Operation Bucharest

**Ans. (b)**

End of Solution

- Q.12** Which of the following is not correctly matched ?
- (a) Article 155 Removal of the Governor
  - (b) Article 153 -Office of the Governor
  - (c) Article 156 Term of the Governor
  - (d) Article 154 Executive authority of the Governor

**Ans. (a)**

End of Solution

- Q.13** Who among the following had the longest tenure as the Chief Justice of Supreme Court of independent India?
- (a) Sabyasachi Mukherjee
  - (b) Y.V. Chandrachud
  - (c) Ranganath Mishra
  - (d) K.G. Balakrishnan

**Ans. (b)**

End of Solution

- Q.14** Which of the following acids can melt gold ?
- (a) Aqua regia
  - (b) Sulphuric Acid
  - (c) Hydrochloric Acid
  - (d) Nitric Acid

**Ans. (a)**

End of Solution

- Q.15** Match List-I with List-II and choose the correct answer from the codes given below the lists:

**List-I (Macromolecule)**

- A. DNA
- B. Phospholipid
- C. Cellulose
- D. Starch

**List-II (Examples)**

- 1. Energy Storage
- 2. Cell Membranes
- 3. Encode genes
- 4. Cell Walls

**Codes:**

- |     | A | B | C | D |
|-----|---|---|---|---|
| (a) | 3 | 4 | 1 | 2 |
| (b) | 4 | 3 | 1 | 2 |
| (c) | 1 | 2 | 3 | 4 |
| (d) | 3 | 2 | 4 | 1 |

**Ans. (d)**

End of Solution



**Q.16** Given below are two statements, one is labelled as Assertion (A) and the other as Reason (R).

**Assertion (A):** Earth is the only planet known to have life.

**Reason (R):** Earth has an atmosphere which is a mixture of oxygen, nitrogen and carbon dioxide.

Select the correct answer from the codes given below :

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

**Ans. (c)**

End of Solution

**Q.17** On which date is 'World Heart Day' celebrated every year?

- (a) 26th September
- (b) 28th September
- (c) 29th September
- (d) 30th September

**Ans. (c)**

End of Solution

**Q.18** The first Bullet train in India, which is to run between Ahmedabad and Mumbai is being prepared with the help of which one of the following countries?

- (a) France
- (b) England
- (c) Japan
- (d) United States of America

**Ans. (c)**

End of Solution

**Q.19** The Muppandal-Perungudi area of Tamil Nadu is known for:

- (a) Atomic power
- (b) Solar power
- (c) Hydro power
- (d) Wind power

**Ans. (d)**

End of Solution

**Q.20** The correct order of mountain ranges from South to North is:

- (a) Zaskar, Pir Panjal, Ladakh, Karakoram
- (b) Karakoram, Zaskar, Pir Panjal, Ladakh
- (c) Pir Panjal, Zaskar, Ladakh, Karakoram
- (d) Pir Panjal, Ladakh, Zaskar, Karakoram

**Ans. (c)**

End of Solution

**Q.21** In which state of India are the largest monazite deposits found?

- (a) Tamil Nadu
- (b) Kerala
- (c) Karnataka
- (d) Odisha

**Ans. (b)**

End of Solution

**Q.22** Given below are two statements, one is labelled as Assertion (A) and the other as Reason (R).

**Assertion (A):** Deccan trap is deficient in ground water.

**Reason (R):** Deccan trap has more than 1000 metre thick impenetrable basalt rock cover.

Select the correct answer from the codes given below:

- (a) Both (A) and (R) are true and (R) is the correct explanation of (A).
- (b) Both (A) and (R) are true, but (R) is not the correct explanation of (A).
- (c) (A) is true, but (R) is false.
- (d) (A) is false, but (R) is true.

**Ans. (a)**

End of Solution

**Q.23** Which of the following protozoa is known as the "Grand old man of Intestine"?

- (a) Giardia
- (b) Arcella
- (c) Diffusia
- (d) Radiolaria

**Ans. (a)**

End of Solution

**Q.24** Which of the following is the chemical nature of enzymes ?

- (a) Lipid
- (b) Carbohydrate
- (c) Protein
- (d) Vitamin

**Ans. (c)**

End of Solution

**Q.25** Which of the following coal producing area is not located in Chhattisgarh ?

- (a) Sonhat
- (b) Chirimiri
- (c) Jhilimili
- (d) Barjora

**Ans. (d)**

End of Solution

**Q.26** 'जब तक जीना तब तक सीना' लोकोक्ति का अर्थ है :

- (a) अवकाश का अभाव होना
- (b) विवशता का अनुभव होना
- (c) जीते जी कोई-न-कोई काम-धंधा करना पड़ता है
- (d) आजीविका के लिए भटकना पड़ता है

**Ans. (c)**

End of Solution

**Q.27** किस वाक्य में विशेषण का प्रयोग है?

- (a) लड़का आया।
- (b) लड़का चला गया।
- (c) मैंने बुलवाया।
- (d) तब वह लड़का आया।

**Ans. (d)**

End of Solution

**Q.28** 'नौकर लकड़ी काटता है।' यह वाक्य किस वाच्य का उदाहरण है?

- (a) कर्तृवाच्य
- (b) कर्मवाच्य
- (c) भाववाच्य
- (d) इनमें से कोई नहीं

**Ans. (a)**

End of Solution

**Q.29** जिस विकारी शब्द के प्रयोग से किसी वस्तु के विषय में विधान किया जाता है, उसे कहते हैं :

- (a) क्रिया
- (b) कारक
- (c) उपसर्ग
- (d) संज्ञा

**Ans. (a)**

End of Solution

**Q.30** जिस पदार्थ पर कर्ता की क्रिया का फल पड़े, उसे कहते हैं :

- (a) कर्ताकारक
- (b) कर्मकारक
- (c) करणकारक
- (d) सम्प्रदानकारक

**Ans. (b)**

End of Solution

Q.31 'चरणकमल' में समास है :

- (a) कर्मधारय समास (b) तत्पुरुष समास  
(c) द्विगु समास (d) द्वन्द्व समास

Ans. (a)

End of Solution

Q.32 'साँझ' शब्द का तत्सम रूप है :

- (a) शाम (b) संध्या  
(c) सायंकाल (d) संज्ञा

Ans. (b)

End of Solution

Q.33 'तद्भव' शब्द का सन्धि-विच्छेद है :

- (a) तत् + भव (b) तत्त + भव  
(c) तद् + भव (d) तक + भव

Ans. (a)

End of Solution

Q.34 'आपबीती' समस्त पद में कौन-सा समास है?

- (a) अव्ययीभाव (b) कर्मधारय  
(c) तत्पुरुष (d) द्वन्द्व

Ans. (c)

End of Solution

Q.35 निम्नलिखित में शुद्ध वर्तनी का शब्द है :

- (a) कालीदास (b) कालिदास  
(c) कालियदास (d) कलिदास

Ans. (b)

End of Solution

Q.36 निम्नलिखित में तालु से उच्चरित वर्ण है :

- (a) घ (b) ठ  
(c) ज (d) द

Ans. (c)

End of Solution



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Q.37 इनमें 'पंगत' का तत्सम शब्द कौन-सा है?

- (a) पंक्ति (b) पांगत  
(c) पंक्तियाँ (d) पांक्ति

Ans. (a)

End of Solution

Q.38 निम्नलिखित में शुद्ध वर्तनी का शब्द है :

- (a) कवियत्री (b) कवियित्री  
(c) किवत्री (d) कवयित्री

Ans. (d)

End of Solution

Q.39 'दोपहर के बाद का समय' अनेक शब्दों के स्थान पर एक शब्द है :

- (a) पूर्वाह्न (b) मध्याह्न  
(c) अपराह्न (d) गोधूलि

Ans. (c)

End of Solution

Q.40 विद्यापति किस भाषा के कवि हैं?

- (a) अवधी (b) मैथिली  
(c) ब्रजभाषा (d) बघेली

Ans. (b)

End of Solution

Q.41 निम्नलिखित में से कौन-सा कथन असत्य है?

- (a) भरतमुनि ने मूलतः आठ रसों की परिकल्पना की थी।  
(b) भयानक रस का स्थायी भाव जुगुप्सा है।  
(c) संचारी भावों की संख्या तैंतीस है।  
(d) हास्य तथा शृंगार रस परस्पर मित्र होते हैं।

Ans. (b)

End of Solution

Q.42 संचारी भावों की संख्या है :

- (a) तैंतीस (b) बत्तीस  
(c) तेईस (d) आठ

Ans. (a)

End of Solution

Q.43 'तनय' शब्द का पर्याय है :

- (a) पुत्री (b) पुत्र  
(c) पिता (d) माता

Ans. (b)

End of Solution

Q.44 'विदेश में रहने वाले व्यक्ति' के लिए एक शब्द है :

- (a) अंतेवासी (b) प्रहरी  
(c) प्रवासी (d) प्रगल्भ

Ans. (c)

End of Solution

Q.45 निम्नलिखित शब्द-युग्मों में 'चंद्रमा' का पर्यायवाची युग्म नहीं है :

- (a) हिमांशु-सुधांशु (b) राकेश-सुधाकर  
(c) चंद्रिका-चाँदनी (d) मृगांक-कलानिधि

Ans. (c)

End of Solution

Q.46 'कोप' शब्द का विलोम है :

- (a) कृपा (b) खेद  
(c) प्रसन्नता (d) आगत

Ans. (a)

End of Solution

Q.47 'जिसके समान कोई दूसरा न हो' अनेक शब्दों के स्थान पर एक शब्द है :

- (a) अद्वितीय (b) अनन्य  
(c) अतुलनीय (d) समरूप

Ans. (a)

End of Solution

Q.48 'आठ कनौजिए नौ चूल्हे' लोकोक्ति का अर्थ है :

- (a) आवश्यकता से अधिक (b) मूर्खों का बसेरा  
(c) अलगाव की स्थिति (d) बेतरतीब

Ans. (c)

End of Solution

**Q.49** 'तैर कर पार होने की इच्छा रखने वाला' अनेक शब्दों के स्थान पर एक शब्द है :

- (a) तस्कर (b) तितीर्षु  
(c) तटस्थ (d) त्याज्य

**Ans. (b)**

End of Solution

**Q.50** निम्नलिखित में अशुद्ध वाक्य है :

- (a) उसने दिन भर में नाटक पढ़ डाला।  
(b) तुम कहाँ जा रहे हो?  
(c) कल रात वर्षा नहीं हुई।  
(d) वह क्रोध में भरकर बोला।

**Ans. (a)**

End of Solution

**Q.51** The ratio of Young's Modulus of high tensile steel to that of mild steel is about:

- (a) 0.5 (b) 1.0  
(c) 1.5 (d) 2.0

**Ans. (b)**

End of Solution

**Q.52** Lack of toughness in a material implies:

- (a) ductility (b) softening  
(c) brittleness (d) plasticity

**Ans. (c)**

Toughness is the ability of material to absorb energy and plastically deform without fracture.

Lack of toughness → Brittleness

End of Solution

**Q.53** The correct sequence of creep deformation in a creep curve in order of their elongation is:

- (a) Steady state, Transient Accelerated  
(b) Transient, Steady state, Accelerated  
(c) Transient, Accelerated, Steady state  
(d) Accelerated, Steady state, Transient

**Ans. (b)**

Transient creep (primary creep) — Strain rate decreases.

Steady state creep (secondary creep) — Strain rate is constant

Accelerate creep (tertiary creep) — Strain rate increases rapidly until failure

End of Solution



- Q.54** If the volume of a gas is reduced to half from its original volume, the specific heat will:
- (a) be reduced to half (b) be doubled  
(c) remain constant (d) increase four times

**Ans. (c)**

End of Solution

- Q.55** A cycle tyre bursts suddenly. What type of process is this?
- (a) Isothermal  
(b) Adiabatic  
(c) Isochoric  
(d) Isobaric

**Ans. (b)**

End of Solution

- Q.56** Which of the following represent a closed system?
- (a) Boiler  
(b) Universe  
(c) Bomb calorimeter  
(d) Centrifugal pump

**Ans. (c)**

End of Solution

- Q.57** Cast iron has carbon content of \_\_\_\_\_.
- (a) 0.3 – 0.6% (b) 0.65 – 1.5%  
(c) 2 – 4% (d) 7 – 8%

**Ans. (c)**

Generally cast irons are a class of ferrous alloys with carbon contents above 2.14 Wt%, in practice, however, most cast irons contain between 3.0 and 4.5 Wt% carbon.

End of Solution

- Q.58** Polyvinyl Chloride (PVC) is a:
- (a) Thermosetting material  
(b) Thermoplastic material  
(c) Elastoplastic material  
(d) Rigid plastic material

**Ans. (b)**

PVC is a thermoplastic material.

End of Solution

**Q.59** 66.6% risk is considered as:

- (a) Very low
- (b) Low
- (c) Moderate
- (d) High

**Ans. (d)**

End of Solution

**Q.60** Which of the following is a type of network topology?

- (a) Linear
- (b) Star
- (c) Circular
- (d) Square

**Ans. (b)**

End of Solution

**Q.61** As per the Factories Act 1948, no child who has completed his/her \_\_\_\_\_ shall be required to work in any factory.

- (a) Eighteenth year
- (b) Sixteenth year
- (c) Fourteenth year
- (d) Tenth year

**Ans. (c)**

End of Solution

**Q.62** The Lesson Learned meeting is usually conducted at which phase of the project?

- (a) During the execution phase
- (b) On project completion
- (c) During budgeted planning
- (d) During risk management planning

**Ans. (b)**

End of Solution

**Q.63** Which technique helps estimate duration and dependencies of tasks in a project?

- (a) Checklist method
- (b) SWOT analysis
- (c) Brainstorming
- (d) PERT

**Ans. (d)**

End of Solution

**Q.64** Yield of a reservoir represents:

- (a) The inflow into the reservoir
- (b) The capacity of the reservoir
- (c) The outflow demand on the reservoir
- (d) None of the above

**Ans. (c)**

End of Solution

- Q.65** A level crossing type of cross drainage work consists of:
- (a) one regulator only (b) two weirs only  
(c) one weir and two regulators (d) two weirs and two regulators

**Ans. (c)**

End of Solution

- Q.66** The amount of energy carried by a photon is inversely proportional to \_\_\_\_\_.  
(a) Speed (b) Wavelength  
(c) Amplitude (d) Albedo

**Ans. (b)**

$$\text{Energy of a photon} = \frac{hc}{\text{Wavelength } (\lambda)}$$

End of Solution

- Q.67** A dummy activity is used in 'PERT' network to describe:
- (a) Precedence relationship (b) Necessary time delay  
(c) Resource restriction (d) Resource idleness

**Ans. (a)**

A dummy activity is used in PERT Network to describe 'Precedence Relationship'.

End of Solution

- Q.68** The ratio of rainfall in a particular year to the average annual rainfall (AAR) is called the \_\_\_\_\_.  
(a) Index of wetness (b) Index of drought  
(c) Index of average rainfall (d) Index of yearly rainfall

**Ans. (a)**

End of Solution

- Q.69** Unit of duty of crop is:
- (a) cm/sec (b) ha/cm  
(c) m/ha (d) ha per cumec

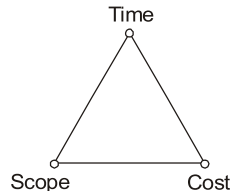
**Ans. (d)**

End of Solution

**Q.70** The term “triple constraint” in project management traditionally consists of \_\_\_\_\_ of the project.

- (a) cost, scope and quality (b) risk, resources and time  
(c) time, cost and scope (d) quality, risk and resources

**Ans. (c)**



End of Solution

**Q.71** Rate of evaporation is inversely proportional to:

- (a) surface area (b) temperature  
(c) humidity (d) wind speed

**Ans. (c)**

End of Solution

**Q.72** In a closed system, there is:

- (a) no exchange of energy of the system.  
(b) exchange of energy with the surroundings and not the mass.  
(c) exchange of mass with the surroundings.  
(d) exchange of mass and energy with the surroundings.

**Ans. (b)**

End of Solution

**Q.73** Work done is zero in constant \_\_\_\_\_ process.

- (a) Pressure  
(b) Volume  
(c) Both pressure and volume  
(d) Temperature

**Ans. (b)**

End of Solution

**Q.74** A unit hydrograph has one unit of:

- (a) peak discharge (b) rainfall duration  
(c) direct runoff (d) the time base of direct runoff

**Ans. (c)**

End of Solution



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**Q.75** Which parameter remains constant during reversible isothermal process?

- (a) Rate of heat exchange
- (b) Internal energy
- (c) Enthalpy
- (d) Entropy

**Ans. (b)**

End of Solution

**Q.76** In India, the tropical cyclones occur in the months of \_\_\_\_\_.

- (a) July – August
- (b) May – June
- (c) October – November
- (d) Both May – June and October–November

**Ans. (d)**

End of Solution

**Q.77** The curve traced out by the end of a piece of thread unwound from a circle or a polygon, the thread being kept tight, is termed as \_\_\_\_\_.

- (a) Evolute
- (b) Involute
- (c) Archimedean Spiral
- (d) Logarithmic Spiral

**Ans. (b)**

End of Solution

**Q.78** The difference between the 1 primary scale division of the vernier and the 1 (one) vernier scale division is termed as \_\_\_\_\_.

- (a) Least count of vernier scale
- (b) Zero point on the vernier scale
- (c) Error quotient of the vernier scale
- (d) Correction factor of the vernier scale

**Ans. (a)**

End of Solution

**Q.79** In third angle projection, the object is kept in:

- (a) 1<sup>st</sup> quadrant
- (b) 2<sup>nd</sup> quadrant
- (c) 3<sup>rd</sup> quadrant
- (d) 4<sup>th</sup> quadrant

**Ans. (c)**

End of Solution

**Q.80** What is the purpose of a sectional view in engineering drawing?

- (a) To display the external features of an object.
- (b) To show the internal details of an object by cutting through it.
- (c) To represent an object in a simplified form.
- (d) To provide a perspective view of an object.

**Ans. (b)**

End of Solution

**Q.81** When the axis of solid is perpendicular to V.P., the \_\_\_\_\_ view should be drawn first and \_\_\_\_\_ view then projected from it.

- (a) front, top (b) top, side  
(c) side, front (d) top, front

**Ans. (a)**

End of Solution

**Q.82** If a plane is inclined to both the reference planes, then the plane is called:

- (a) auxiliary plane (b) oblique plane  
(c) perpendicular plane (d) cross plane

**Ans. (b)**

End of Solution

**Q.83** Cellulose is a polymer made from:

- I. Glucose  
II. Glycogen  
III. Fructose  
IV. Sucrose

Select the correct answer from the options given below:

- (a) Both I and II (b) Only I  
(c) Only III (d) Both III and IV

**Ans. (b)**

End of Solution

**Q.84** In which year was 5G telecommunications technology launched in India?

- (a) 2021 (b) 2022  
(c) 2023 (d) 2024

**Ans. (b)**

End of Solution

**Q.85** Which technology is used in Crypto currency?

- (a) Artificial Intelligence (AI)  
(b) Blockchain  
(c) Machine Learning (ML)  
(d) 3D Printing

**Ans. (b)**

End of Solution

**Q.86** Dry ice is a solid. Which of the following represents dry ice?

- (a) Carbon monoxide (b) Nitrous oxide  
(c) Carbon dioxide (d) Lactic acid

**Ans. (c)**

End of Solution

**Q.87** If the Representative Fraction (RF) is 0.25 and the actual length of the object is 1.50 m, the length of the drawing will be \_\_\_\_\_.

- (a) 375 cm (b) 37.5 cm  
(c) 3.75 cm (d) 0.375 cm

**Ans. (b)**

End of Solution

**Q.88** The Nobel Prize in Chemistry 2023 has been awarded to:

- (a) Pierre Agostini (b) Moungi Bawendi  
(c) Victor Ambros (d) Narges Mohammadi

**Ans. (b)**

End of Solution

**Q.89** The curing of concrete is the process of \_\_\_\_\_.

- (a) Strengthening it through hydration.  
(b) Filling the materials in the left out depressions to make its surface smooth.  
(c) Plastering the concrete surface.  
(d) Applying distemper paint on its surface.

**Ans. (a)**

Curing of concrete is the process of maintaining adequate moisture, temperature and time to allow the concrete to achieve its desired strength.

End of Solution

**Q.90** Which of the following metals has the lowest temperature coefficient of resistance?

- (a) Copper (b) Aluminium  
(c) Silver (d) Gold

**Ans. (d)**

Gold — 0.0034/°C

Silver — 0.0038/°C

Copper — 0.00386/°C

Aluminium — 0.00429/°C

Gold – Temperature coefficient of resistance indicates how much a material's resistance changes with temp. For metals, resistance increases with temperature and each metal has a different TCR.

End of Solution



**Q.91** Mild steel belongs to the category of:

- (a) no carbon steel (b) low carbon steel  
(c) medium carbon steel (d) high carbon steel

**Ans. (b)**

Mild steel is also known as low carbon steel.

End of Solution

**Q.92** Which of these is **not** a function of alloy steels?

- (a) Improves ductility (b) Improves machinability  
(c) Increases strength (d) Reduces cost

**Ans. (d)**

Alloy steel improves m/c ability, ductility and strength.

End of Solution

**Q.93** The constant of proportionality between elongation and axial force given by Hooke's Law is \_\_\_\_\_.

- (a) Ultimate strength (b) Elastic limit  
(c) Yield point (d) Young's Modulus

**Ans. (d)**

Hooke's law states

$$\text{Stress} = \text{Young's modulus} \times \text{strain}$$

$$F = \frac{EA}{L}$$

$F$  = axial force;  $\Delta L$  = elongation

$E$  = Young's modulus;  $A$  = Cross-sectional area

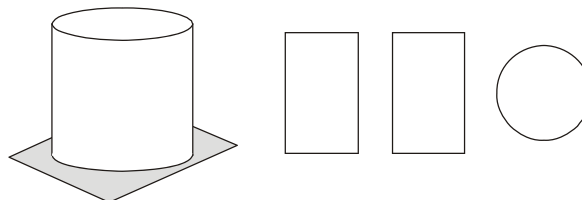
$L$  = Original length

End of Solution

**Q.94** The front view, side view and top view of a cylinder standing on horizontal plane based on horizontal plane is:

- (a) circle, rectangle and rectangle (b) rectangle, rectangle and circle  
(c) rectangle, circle and rectangle (d) circle, triangle and triangle

**Ans. (b)**



End of Solution

**Q.95** Which of the following is **not** a property of engineering materials?

- (a) Mechanical properties (b) Chemical properties  
(c) Polymorphism properties (d) Electrical properties

**Ans. (c)**

Polymorphism is ability of material to exist in one or more crystal form.

End of Solution

**Q.96** Phenology is the study of the relationship between climate and periodic \_\_\_\_\_.

- (a) Physical phenomenon (b) Chemical phenomenon  
(c) Spatial phenomenon (d) Biological phenomenon

**Ans. (d)**

End of Solution

**Q.97** What is the effect of the greenhouse gases on the Earth's atmosphere?

- (a) They cool down the Earth. (b) They trap heat and warm the Earth.  
(c) They block all solar radiation. (d) They increase oxygen levels.

**Ans. (b)**

End of Solution

**Q.98** The National Action Plan on Climate Change was launched by the Government of India in 2008 with a target to increase forest area from presently 23% to \_\_\_\_\_.

- (a) 25% (b) 33%  
(c) 40% (d) 45%

**Ans. (b)**

End of Solution

**Q.99** Which type of battery is commonly used in modern electric vehicles due to its high energy density and efficiency?

- (a) Alkaline (b) Microbial fuel cell  
(c) Lithium ion (d) Lead acid

**Ans. (c)**

End of Solution

**Q.100** The capacity of the handling/conveying equipment should \_\_\_\_\_ the capacity of processing unit of units.

- (a) Match (b) Be higher than  
(c) Be lower than (d) Be different from

**Ans. (b)**

Capacity of material handling must be higher than the capacity of processing to avoid (i) idle time, (ii) low efficiency

End of Solution

**Q.101** Which of the following is not a type of belt conveyor?

- (a) Flat
- (b) Metallic
- (c) Telescopic
- (d) Slate

**Ans. (d)**

State conveyor is not a belt conveyor. It carries SLATS not BELTS.

End of Solution

**Q.102** As per CPCB guidelines, for the AQI range of 201-300, the air quality will be :

- (a) Excellent
- (b) Good
- (c) Poor
- (d) Severe

**Ans. (c)**

End of Solution

**Q.103** The errors committed by a person in measurements are:

- (a) Gross errors
- (b) Random errors
- (c) Instrumental errors
- (d) Environmental errors

**Ans. (a)**

End of Solution

**Q.104** A \_\_\_\_\_ is a physical representation of the quantity under measurement whose true value is known with great accuracy.

- (a) Scale
- (b) Standard
- (c) Least Count
- (d) Unit

**Ans. (b)**

End of Solution

**Q.105** In the SI system of measurements, the \_\_\_\_\_ is defined as the basic unit of current, which is considered to be a fundamental unit of measurement.

- (a) Watt (W)
- (b) Joule (J)
- (c) Volt (V)
- (d) Ampere (A)

**Ans. (d)**

End of Solution

**Q.106** The units whose sizes, independently are called: cannot be chosen

- (a) Derived Units
- (b) Fundamental Units
- (c) Absolute Units
- (d) Auxiliary Fundamental Units

**Ans. (a)**

End of Solution

**Q.107** What is the coupling field used between the electrical and mechanical systems in energy conversion devices?

- (a) Magnetic field only
- (b) Electric field only
- (c) Magnetic field or Electric field
- (d) None of the above

**Ans. (c)**

End of Solution

**Q.108** When work is done on a body by an external force its:

- (a) Kinetic energy increases.
- (b) Potential energy increases.
- (c) Both kinetic and potential energy increases.
- (d) Sum of kinetic energy and potential energy remains same.

**Ans. (c)**

End of Solution

**Q.109** Which of the following static characteristic of instruments is undesirable?

- (a) Accuracy
- (b) Reproducibility
- (c) Sensitivity
- (d) Drift

**Ans. (d)**

End of Solution

**Q.110** What is the core value that emphasizes the importance of developing and maintaining competence in professional practice?

- (a) Ignorance
- (b) Competence
- (c) Mediocrity
- (d) Negligence

**Ans. (b)**

End of Solution

**Q.111** What is the term of copyright for an author of a book?

- (a) Life of the author plus 20 years      (b) 99 years  
(c) Life of the author plus 60 years      (d) 49 years

**Ans. (c)**

End of Solution

**Q.112** Which is not the content of provisional specification of a Patent?

- (a) The field of invention and background  
(b) Title of the invention  
(c) Claims  
(d) Object of the invention and statement of the invention

**Ans. (c)**

End of Solution

**Q.113** The deliberate manipulation of data, result or images to support a particular hypothesis or claim is called :

- (a) Falsification      (b) Fabrication  
(c) Salami Slicing      (d) Copyright

**Ans. (a)**

End of Solution

**Q.114** Intellectual Property Rights (IPRs) protect the use of information and ideas that are by:

- I. Social value  
II. Ethical value  
III. Moral value  
IV. Commercial value

Select the correct answer from the options given below:

- (a) I, III and IV  
(b) IV only  
(c) II only  
(d) II and IV

**Ans. (b)**

End of Solution

**Q.115** India Meteorological Department recognizes a year as a "Drought Year" when annual rainfall is deficient by \_\_\_\_\_ of normal or more.

- (a) 3 percent      (b) 10 percent  
(c) 15 percent      (d) 20 percent

**Ans. (d)**

End of Solution

**Q.116** The probability law that determines the fluctuations of fraction defective is:

- (a) Poisson
- (b) Normal
- (c) Binomial
- (d) Exponential

**Ans. (c)**

Binomial distribution describes the number of defectives or successes in a fixed number of independent trials. (Like inspecting items).

End of Solution

**Q.117** ISO is only the certification of:

- (a) Product Certification
- (b) Quality Management System
- (c) HACCP Certification
- (d) Environmental Management

**Ans. (b)**

End of Solution

**Q.118** AIDS is caused by \_\_\_\_\_.

- (a) Retrovirus
- (b) Bacteria
- (c) Fungus
- (d) DNA Virus

**Ans. (a)**

End of Solution

**Q.119** Risk analysis does not comprise which one of the following components ?

- (a) Risk identification
- (b) Risk assessment
- (c) Risk communication
- (d) Risk harassment

**Ans. (d)**

End of Solution

**Q.120** ISO-22000 is a derivative of:

- I. ISO-14001
- II. HACCP
- III. TQM
- IV. ISO-9000

Select the correct answer from the options given below:

- (a) Only I
- (b) Both II and III
- (c) Both I and IV
- (d) Only IV

**Ans. (b)**

End of Solution

- Q.121** Quality control is a:
- (a) Process-oriented approach
  - (b) Product-oriented approach
  - (c) Management tool
  - (d) Marketing tool

**Ans. (b)**

End of Solution

- Q.122** Consider the following statements:
- I. Sedimentation is conducted on a large scale in thickeners.
  - II. Sorting classification separates the particles of differing densities.
- Select the correct answer from the following:
- (a) Only I is true.
  - (b) Only II is true.
  - (c) Both I and II are true.
  - (d) Neither I nor II is true.

**Ans. (a)**

End of Solution

- Q.123** The pitch of a standard screw conveyor is equal to its \_\_\_\_\_.
- (a) Radius
  - (b) Diameter
  - (c) Perimeter
  - (d) Half of the perimeter

**Ans. (b)**

End of Solution

- Q.124** Match List-I (Name of Disease) with List-II (Causative Agent) and choose the correct answer from the codes given below the lists

List-I (Name of Disease)	List-II (Causative Agent)
A. Blue baby syndrome	1. Chromates
B. Itai-Itai disease	2. Hg
C. Minamata disease	3. Cd
D. Lung cancer	4. Nitrate

**Codes:**

	A	B	C	D
(a)	4	2	3	1
(b)	1	2	3	4
(c)	1	3	2	4
(d)	4	3	2	1

**Ans. (d)**

End of Solution

**Q.125** In fluid energy mill, most of the reduction is caused by:

- (a) Interparticle attrition
- (b) Compression
- (c) Impact
- (d) Cutting

**Ans. (a)**

End of Solution

**Q.126** The operator that enables the machine to understand the meaning of words and sentences in human language is known as:

- (a) Semantics
- (b) Syntax
- (c) Interpretation
- (d) Resolution

**Ans. (a)**

End of Solution

**Q.127** Uncertainty can be represented by:

- (a) Entropy
- (b) Probability
- (c) Fuzzy logic
- (d) All of the above

**Ans. (d)**

End of Solution

**Q.128** Robots consist of three basic components: power supply, control (memory) console, and

- (a) Microcomputer
- (b) Co-axial cable
- (c) Mechanical units (arms)
- (d) Software

**Ans. (c)**

End of Solution

**Q.129** \_\_\_\_\_ is considered a type of Artificial Intelligence agent.

- (a) Simple Reflex AI agent
- (b) Learning agent
- (c) Goal-based AI agent
- (d) All of the above

**Ans. (d)**

End of Solution





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**Q.130** Which type of maintenance is most effective?

- (a) Preventive maintenance
- (b) Corrective maintenance
- (c) Shutdown maintenance
- (d) Breakdown maintenance

**Ans. (a)**

Preventive maintenance : Most effective reduces downtime, equipment life practice maintenance to prevent failures.

End of Solution

**Q.131** The full form of IoT is:

- (a) Institute of Technology
- (b) Internet of Things
- (c) Index Organized Table
- (d) Inter-Operability Test

**Ans. (b)**

End of Solution

**Q.132** Results based on incomplete or prejudiced data, produced by AI tools, are signified as:

- (a) AI fairness
- (b) Deep fake
- (c) Robotics
- (d) AI bias

**Ans. (d)**

End of Solution

**Q.133** What is Machine Learning used in Artificial Intelligence?

- (a) To enable computers to solve problems without being explicitly programmed
- (b) To create databases for storing information
- (c) To control the hardware in robots
- (d) To improve human communication with robots

**Ans. (a)**

ML in AI is a technique that enables computers to learn from data and make decisions or predictions without being explicitly programmed.

End of Solution

**Q.134** Gasification of biomass is which type of conversion process?

- (a) Chemical
- (b) Biochemical
- (c) Biological
- (d) Thermochemical

**Ans. (b)**

End of Solution

**Q.135** The following type of energy is stored as latent heat:

- (a) Chemical Energy
- (b) Mechanical Energy
- (c) Thermal Energy
- (d) Electrical Energy

**Ans. (c)**

End of Solution

**Q.136** The longest day and longest night dates are respectively:

- (a) 21<sup>st</sup> September; 21<sup>st</sup> March
- (b) 21<sup>st</sup> June; 21<sup>st</sup> December
- (c) 21<sup>st</sup> June; 21<sup>st</sup> March
- (d) 21<sup>st</sup> September; 21<sup>st</sup> December

**Ans. (b)**

End of Solution

**Q.137** Which process is responsible for the production of energy in the Sun?

- (a) Nuclear fission reaction
- (b) Nuclear fusion reaction
- (c) Exothermal chemical reaction
- (d) None of the above

**Ans. (b)**

End of Solution

**Q.138** A barometer measures:

- (a) Differential pressure
- (b) Gauge pressure
- (c) Absolute pressure
- (d) None of the above

**Ans. (c)**

End of Solution

**Q.139** The main combustible component of biogas is:

- (a) Butane
- (b) Ethane
- (c) Methane
- (d) Carbon dioxide

**Ans. (c)**

End of Solution

**Q.140** Solar radiation flux is usually measured with the help of:

- (a) Anemometer
- (b) Sunshine recorder
- (c) Pyranometer
- (d) None of the above

**Ans. (c)**

End of Solution

**Q.141** The Sun subtends an angle of \_\_\_\_\_ minutes on the Earth surface.

- (a) 22 (b) 32  
(c) 42 (d) 52

**Ans. (b)**

**End of Solution**

**Q.142** The point of the Earth's surface directly above the point where an earthquake occurs is called:

- (a) Focus (b) Epicenter  
(c) Fracture (d) Fault

**Ans. (b)**

**End of Solution**

**Q.143** Glacial Lake Outburst Flood (GLOF) belongs to which family of natural hazards?

- (a) Meteorological (b) Climatological  
(c) Geophysical (d) Hydrological

**Ans. (b)**

**End of Solution**

**Q.144** Tsunami warning centre in India is located at:

- (a) Kolkata (b) Hyderabad  
(c) Ahmedabad (d) Mumbai

**Ans. (b)**

**End of Solution**

**Q.145** Which of the following is a geological disaster?

- (a) Tsunami (b) Storm surge  
(c) Flood (d) Wild fire

**Ans. (a)**

**End of Solution**

**Q.146** Which energy is developed by gravitational pull of the Sun and the Moon on the Earth?

- (a) Solar energy (b) Wind energy  
(c) Thermal energy (d) Tidal energy

**Ans. (d)**

**End of Solution**

**Q.147** The horsepower per ton of refrigeration is expressed as:

- (a)  $\frac{4.75}{\text{COP}}$  (b)  $\frac{\text{COP}}{4.75}$   
(c)  $4.75 \times \text{COP}$  (d) None of the above

**Ans. (a)**

End of Solution

**Q.148** Ethanol can be blended with which of the following for use in engines ?

- (a) Diesel (b) Biodiesel  
(c) Petrol (d) Edible oils

**Ans. (c)**

End of Solution

**Q.149** Which gas is used as fire extinguisher?

- (a) Carbon dioxide (b) Oxygen  
(c) Nitrogen (d) Methane

**Ans. (a)**

End of Solution

**Q.150** As per the Disaster Management Act, 2005, the National Disaster Management Authority (NDMA) is headed by the \_\_\_\_\_.

- (a) Home Minister (b) Environment Minister  
(c) Prime Minister (d) Cabinet Secretary

**Ans. (c)**

End of Solution

■■■■