

ENGINEERING SCIENCE (622)
SAMPLE QUESTION PAPER
CLASS-XII
(2018-19)

Time allowed: **3** hours

Maximum Marks: **70**

PART –I

Engineering Drawing

Maximum Marks: **40**

General Instructions:

- (i) This part contains **26** questions.
- (ii) Question **1- 12** in **Group A** are **MCQ / FILL IN THE BLANKS/ DIRECT QUESTIONS** carrying **1** mark each. Attempt any 10 out of these.
- (iii) Question **13-19** in **Group B** are **Short-answer type** questions carrying **3** marks each. Attempt any 5 out of these.
- (iv) Question **20-26** in **Group C** are **Long/Essay-answer type** questions carrying **5** marks each. Attempt any 3 out of these

(Group A)

- Q1 Which one among the following represents a permanent fastener?
 - a) Nut
 - b) Rivet
 - c) Screw
 - d) Bolt

- Q2 The number of cotters used in an assembly of sleeve and cotter joint are
 - a) One
 - b) Two
 - c) Three
 - d) Four

- Q3 Which is the modified form of square thread?
 - a) V-thread
 - b) Metric thread
 - c) Knuckle thread
 - d) B.S.W thread

- Q4 What is the width of the Rectangular Sunk Key, if the diameter of the shaft is D?
 - a) D/2
 - b) D/8
 - c) D/4
 - d) D/6

- Q5 True shape can be obtained on a plane _____ to the section plane
- Q6 The projection of a cut portion of the solid on HP is called sectional.
a) Top View
b) Front View
c) Left side view
d) Right side view
- Q7 A vertical cone is cut by a horizontal section plane, the resulting cut solid is
a) cone
b) cylinder
c) frustum
d) hemisphere
- Q8 A coupling is a mechanical device that temporarily joins two rotating shafts
a) True
b) False
- Q9 Where is friction coupling used
- Q10 In drawing the development of objects, true lengths are used.
a) True
b) False
- Q11 Name the methods of development of right solids.
- Q12 To develop the surfaces of pyramids, it is necessary to find _____ of the slant edges when they are not parallel to reference plane.
(Group B)
- Q13 What is sectioning? Give two examples where sectioning is used
- Q14 Draw the development of the cube of side 50mm
- Q15 Develop the surface of a cone of base diameter 50 mm and 60 mm axis.
- Q16 What are permanent fasteners and where are they used
- Q17 Draw the free hand sketch of Any key
- Q18 What do you understand by coupling and what are the various types of flanged couplings?
- Q19 What is cotter?

(Group C)

- Q20 A sphere of 40 mm diameter is cut by a vertical section plane ,which passes through it at a distance of 10 mm from its centre .Draw the sectional front view and top view
- Q21 A cone, base 50 mm diameter and axis 60 mm long has its axis parallel to VP and inclined at 45° to HP. It is cut by a horizontal section plane passing through the mid-point of the axis. Draw Front View, sectional Top View and true shape of the section.
- Q22 Draw the development of the hexagonal pyramid of base 30 mm ,and height60 mm is resting on its base on the ground with two of its base edges parallel to V.P.
- Q23 Define the terms “ External thread” and ”internal thread” with the help of diagram.
- Q24 What do you understand by the self locking of the cotter? Show with neat sketch.
- Q25 Where do we use coupling .Draw a free hand sketch of box muff coupling.
- Q26 Draw a free hand sketch of flanged coupling.

PART –II

Workshop Technology

Maximum Marks: 30

General Instructions:

- (i) This part contains **23** questions.
- (ii) Question **27- 36** in **Group D** are **MCQ / FILL IN THE BLANKS/ DIRECT QUESTIONS** carrying **1** mark each. Attempt any 8 out of these.
- (iii) Question **37-42** in **Group E** are **short-answer type** questions carrying **3** marks each. Attempt any 4 out of these.
- (iv) Question **43-49** in **Group F** are **long-answer type** questions carrying **5** marks each. Attempt any 2 out of these

(Group D)

Q27 Projection welding is.....

- a) Multi-spot welding process
- b) Continuous spot welding process
- c) Used to form mesh
- d) Used to make cantilevers

Q28 Seam-welding is.....

- a) Multi-spot welding process
- b) Continuous spot welding process
- c) Used to form mesh
- d) Used for welding cylindrical objects

Q29 Thermit welding is a form of.....

- a) Resistance welding
- b) Gas welding
- c) Fusion welding
- d) Forge welding

Q30 TIG welding is best suited for welding.....

- a) Mild welding
- b) Stainless steel
- c) Silver
- d) Aluminium

Q31 Submerged arc welding is.....

- a) A process which uses a mixture of iron oxide and granular aluminium
 - b) Accomplished by maintaining a hot molten metal pool between plates
 - c) A process in which arc is maintained under a blanket of flux
 - d) All of the above
- Q32 Arc-welding uses following electric supply
- a) A.C.
 - b) D.C.
 - c) Both AC and DC
 - d) Spiral waveform
- Q33 Forge welding is best suited for.....
- a) Stainless steel
 - b) High carbon steel
 - c) Cast iron
 - d) Wrought iron
- Q34 Which of the following is /are the type of metallic coating process
- a) Electroplating
 - b) Galvanising
 - c) Tin plating
 - d) All of above
- Q35 Which of the following is /are the type of organic coating
- a) Varnishes
 - b) Oil paints
 - c) Enamels
 - d) All of above
- Q36 The plastics which softens when heat is applied with or without pressure ,but requires cooling to set them to shape are called
- a) Thermo softening materials
 - b) Thermosetting materials
 - c) Thermoplastics materials
 - d) Thermo stating materials

(Group E)

- Q37 Explain spot welding? How is seam welding different from this.
- Q38 Write a short note on welding defects
- Q39 Explain electroplating processes .Give their applications.
- Q40 Why is coating of materials important?

Q41 What are the various types of organic coating .Explain any two out of these in brief.

Q42 Differentiate between thermosetting and thermoplastic plastics

(Group F)

Q43 Explain the process of oxy-acetylene gas welding and describe the equipments used for it.

Q44 Describe the process of Thermit Welding with the help of neat diagram.

Q45 Describe different types of gas flames with the help of neat diagrams.

Q46 Describe the application method of organic finishes

Q47 What is galvanising? What are its various types? Explain?

Q48 Explain injection moulding process. Which type of product can be made by this process.

Q49 Explain compression moulding process with the help of neat diagram.