#### **VERSION CODE**

B

## KIIT UNIVERSITY KIITEE-2011

Answer Sheet No.								

**QUESTION BOOKLET** 

#### M.Tech

# MECHANICAL ENGINEERING Important Instructions

- 1. Use only <u>Blue/Black</u> Ball Point Pen to Fill up the Particulars on the Question Booklet and Answer Sheet and also for marking the responses on the Answer Sheet. **Use of Pencil is strictly prohibited**.
- 2. Immediately Fill in the Particulars asked on this page & on the answer sheet very carefully. Write the Application number and Roll Number, asked in the Answer Sheet very neatly and darken the respective circle.
- 3. Write the Answer Sheet Number on the Attendance Sheet, as mentioned in the Answer Sheet.
- 4. Open the seal of the Question Booklet after getting necessary instructions from the invigilator. This Question Booklet contains 28 pages.
- 5. After opening the seal, check all the pages of the question booklet. If there is any discrepancy, report to the invigilator immediately for change of question booklet.
- 6. This question Booklet consists of **120** multiple choice questions each carrying **+4** for correct response, **-1** for incorrect response and **0** for no response.
- 7. The Test is of **two hours** duration.
- 8. Handle the Question Booklet and Answer Sheet with care.
- 9. Don't do any rough work or writing work on Answer Sheet. All calculations / writing works are to be done in the space provided for the purpose in the Question Booklet itself, marked 'Space for Rough Work'.
- 10. On demand, show the admit card to the invigilator.
- 11. The candidates are governed by the Rules and Regulation of the University with regard to their conduct in the Examination Hall / Room.
- 12. Candidates are not allowed to carry any textual material, printed or written, bits of papers, pager, mobile phone, electronic device, electronic / manual calculator, drawing instruments (such as scale, compass etc.) or any other material except the Admit Card and Ball Point Pens inside the Examination Hall / Room.
- 13. No Part of the Question Booklet and Answer Sheet shall be detached or folded or defaced under any circumstances.
- 14. Before handing over the Answer Sheet to the invigilator, confirm that your Answer Sheet has been signed by the Invigilator.
- 15. On completion of the test, handover the Answer Sheet to the invigilator. At no circumstances, you will be allowed to leave the examination hall / room without handing over the Answer Sheet to the Invigilator.

Name of the Candidate	Roll No
Examination Centre	

Candidate's Signature

Invigilator's Signature

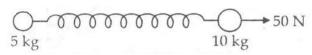
### **MECHANICAL ENGINEERING**

- 1. Impulse gives a measure of the product of
  - (A)Force and displacement
  - (B)Mass and acceleration
  - (C)Force and time
  - (D)Force and velocity
- 2. Car P moving at 45 m/s chases another car Q moving at 70 m/s ahead of it in the same direction. A man in car P fires bullet at car Q. if muzzle speed of bullet is 80 m/s, the speed with the bullet hits car Q is
  - (A) 25 m/s

(B) 35 m/s

(C) 55 m/s

- (D)105 m/s
- 3. Two masses 5 kg and 10 kg respectively are connected by a massless spring as shown in figure. A pull of 50 N acts on the 10 kg mass and the 5 kg mass acquires an instantaneous acceleration of 2 m/s<sup>2</sup>. The acceleration imparted to 10 kg mass would be



(A)  $0.5 \text{ m/s}^2$ 

(B)1  $m/s^2$ 

(C)  $2 \text{ m/s}^2$ 

- (D)  $4 \text{ m/s}^2$
- 4. A body of mass m moving with velocity v hits another body of the same mass moving with the same velocity but in opposite direction and sticks to it. After collision, the composite system will move with a velocity
  - (A) Zero

(B) v/2

(C) v

- (D) 2v
- 5. For a maximum horizontal range, the angle of projection of a projectile should be
  - (A)  $30^{\circ}$

(B)  $45^{\circ}$ 

 $(C) 60^{\circ}$ 

- (D)  $75^{\circ}$
- Two cars are going with constant speeds round the concentric circles of radii  $r_1$  and  $r_2$  and take the same time to complete their circular paths. Their angular speeds will correspond to the ratio
  - (A)  $\sqrt{r_1 / r_2}$

(B)  $r_1 / r_2$ 

(C)  $(r_1/r_2)^2$ 

(D) 1